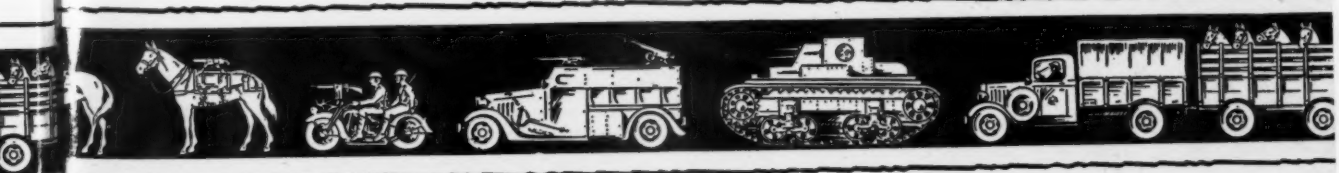
THE CAVALRY JOURNAL



MARCH-APRIL, 1942

CAVALRY COMBAT

BATTLE EXPERIENCE

. . . . is the only volume now available which presents World War historical examples and battle experiences of leaders of small cavalry units.

Additional copies of the present edition in English cannot be obtained after the present very limited supply of 29 copies is exhausted.

Over 500 Pages • 120 Maps

Price $2.50 Postpaid

No. D-1 on The Cavalry Journal book list.
—see last page, this issue.

THE ARMY WIFE

By NANCY SHEA

. . . . a valuable book at an opportune time. Written by an army wife with much experience in the problems of army life, this book is destined to become the *Emily Post* of the army. For those new or old in the service, it is an invaluable guide.

$2.50

No. G-5 on The Cavalry Journal book list.
—see last page, this issue.

ARMIES ON WHEELS

By S. L. A. MARSHALL
—sequel to Blitzkrieg.

* * *

. . . . an authoritative short interpretation of the significant European campaigns since Dunkirk, with particular emphasis on what they teach us about the "ideal army" for an offensive and defensive modern war.

$2.50

No. F-2 on The Cavalry Journal book list.
—see last page, this issue.

The United States Cavalry Association

Organized November 9, 1885

The aim and purpose of the Association shall be to disseminate knowledge of the military art and science, to promote the professional improvement of its members, and to preserve and foster the spirit, the traditions, and the solidarity of the Cavalry of the Army of the United States.—Article III, Constitution.

OFFICERS

MAJ. GEN. JOHN K. HERR
U. S. ARMY RETIRED
President

BRIG. GEN. H. S. HAWKINS
Vice-President

COL. FENTON S. JACOBS
CAVALRY
Secretary-Treasurer

☆

EXECUTIVE COUNCIL

BRIG. GEN. MAXWELL A. O'BRIEN
COL. WILLIAM W. GORDON, Ft. Myer, Virginia
COL. JAMES T. DUKE, GSC
COL. WAYLAND B. AUGUR, GSC
COL. H. E. EASTWOOD, GSC
COL. D. W. McGOWAN, 102d Cav.
LT. COL. VERNE D. MUDGE, GSC
LT. COL. HOMER E. CARRICO, 311th Cav.
LT. COL. HERBERT H. FROST, 2d Armd. Div.

The Cavalry Journal, published under the auspices of the United States Cavalry Association, is not an official publication. Contributions appearing herein do not necessarily reflect official thought or indorsement. Articles appearing in this *Journal* represent the personal views of the author and are published to stimulate interest in, provoke thought on, and provide a free forum for the decorous discussion of cavalry affairs.

The Cavalry Journal

Published Bi-monthly by The United States Cavalry Association
COLONEL FENTON S. JACOBS, *Cavalry, Editor*

Volume LI MARCH-APRIL, 1942 Number 2

CONTENTS

JAPANESE MECHANIZATION
- Japanese Tank Employment 4
- Tank Operations Difficult in China 10
- Japanese Antitank Defense 12

JAPANESE MILITARY TERMS AND CHARACTERS 19

JAPANESE CAVALRY 22

INFANTRY BATTALION GUN (Japanese) 27

SIGNAL COMMUNICATIONS AND EQUIPMENT (Japanese) 28

LANDING OPERATIONS (Japanese) 30

THEY RIDE AGAIN, New Role for Australia's Renowned Light Horse 32
By David W. Bailey

HORSE SENSE AND HORSE POWER 37
By Lieutenant Colonel F. W. Koester

EDITORIAL COMMENT 39

CAMOUFLAGE vs. MISSION FAILURE 44
By Lieutenant David H. Houck and Lieutenant Jay W. Doverspike

COMPLETED STAFF WORK 49

GENERAL HAWKINS' NOTES, Some Lessons on War 50
By Brigadier General H. S. Hawkins

THE CAVALRY REPLACEMENT TRAINING CENTER 53
By Brigadier General Donald A. Robinson

MOTORS DEPARTMENT, C.R.T.C. 57
By Major Roland A. Browne

WEAPONS DEPARTMENT, C.R.T.C. 59
Major Fred T. Manross

HORSEMANSHIP DEPARTMENT, C.R.T.C. 62
By Lieutenant Colonel E. M. Burnett

MARCH SCHEDULES 65
By Lieutenant Colonel B. F. Hoge

LOADING HORSES IN PORTEE TRAILER 66
By Lieutenant Stanley Archenhold

QUANTITY AND QUALITY 68
By Captain Charles E. Brebner

MOBILE SURGICAL UNIT, First Armored Division 72
By Major L. Holmes Ginn, Jr.

MORALE AND MEDICAL AID 74
By Corporal Ray W. Smith

MOTORCYCLE AMBULANCE 75

BLITZ MAINTENANCE 77
By Captain Caesar F. Fiore

THE CAVALRY UNIT AT MICHIGAN STATE COLLEGE 79
By Lieutenant Colonel Morris H. Marcus

R.O.T.C. NEW MEXICO MILITARY INSTITUTE 82

OKLAHOMA MILITARY ACADEMY—Cavalry Unit 84
By Lieutenant Cullus M. Mayes

HORSE FEATHERS 89

NONCOM QUIZ 90

A MODIFIED PUP TENT 91
By Lieutenant John R. Lane

BOOK REVIEWS 93

BOOKS, MANUALS, TEXTS 96

Publication date: April 1, 1942. Deadline date, next issue: May 5, 1942.

THE CAVALRY JOURNAL IS NOT RESPONSIBLE FOR OPINIONS EXPRESSED IN PUBLISHED CONTRIBUTIONS

Editorial offices: 1719 K Street, Northwest, Washington, D. C. Copyright, 1942, by the U. S. Cavalry Association. Publication offices: 1406 East Franklin Street, Richmond, Virginia. Entered as second class matter at Richmond, Virginia, under the act of March 3, 1879, for mailing at special rate of postage provided in Section 412, Act of October 3, 1917. Terms: Domestic subscriptions, individual and organization, $3.00 per year. Foreign, $3.50 per year. Canada: including War Exchange Tax, $3.50. All subscriptions payable in advance. Single copies, 75c. Extra copies to subscribers, 50c. THE CAVALRY JOURNAL *does not* carry paid advertisements.

JAPANESE
MECH

ANIZATION

Japanese Tank Employment

THERE are 15 or more known models of tanks in the Japanese Army. It will be noted that the basic types are few and a slight modification is given a new designation. For convenience, the tanks are classified according to weight as tankettes, light, medium, and heavy tanks.

Tactical doctrine.—As a result of experience in the Manchurian incident, the present war in China, and the clash with the Russians at Changkufeng, the Japanese Army has acquired a lively appreciation of the value of mechanization. Large sums of the current re-equipment budget have been set aside to push the mechanization program. Much thought is being given to the proper use of this new weapon in the light of the experience of the Japanese Army itself and of that of foreign armies. A distinguishing feature of the new Combat Regulations (Sakusen Yomurei) is the modification, extension, and detailed expatiation of the paragraphs devoted to the use of tanks and mechanized units. As in other countries, the Japanese are not sure of the proper use of these weapons and are not yet prepared to commit themselves to a detailed tactical doctrine. Hence, the new regulations, while giving additional space to considerations of mechanization treat the subject with broad generalities which leave considerable doubt as to whether the Japanese have worked out many of the practical details of such highly involved questions as infantry-tank-artillery liaison, control by higher commanders, logistics of mechanized forces, etc.

Strength.—At the outbreak of the China incident, the known mechanized strength of the Japanese Army consisted of two tank regiments. While the wartime expansion of tank units is not definitely known, it is believed that in 1939 there was the equivalent of six tank regiments in China and of one organic tank company in each division. No formally organized large mechanized units (brigades or divisions) are known to exist in the Japanese Army; however, improvised mechanized units have been used on the continent repeatedly with considerable success. Such units, while probably without elaborated tables of organization and equipment, are organized on the basis of expediency and availability of matériel with the usual reconnaissance, ground-holding, shock, and supply components which characterize the mechanized brigades and divisions of foreign armies.

Tanks With Division

Tactics—Offensive.—The tanks with a division are normally used as *accompanying tanks* attached to the infantry units making the principal attack. Such tanks are brought up secretly prior to the attack to assembly positions about 3 miles behind the line of departure. Here final reconnaissance and attack preparations are completed. Tank commanders confer with the infantry regimental and battalion commanders to whom they are to be attached as well as with the artillery which is to support the attack. Topics for conference and decision are: tank objectives and hour of attack; tank jump-off positions; routes to the jump-off position and the subsequent zone of advance; type of artillery support desired

(Continued on page 7)

Japanese reported as having employed these *one man tanks* in the Malay Peninsula fighting.

JAPANESE TWO-MAN TANKETTE M2592 (1932)

These photographs were made in 1940 when the Japanese entered the Kikawei (French) Section of Shanghai.

DATA

Crew: 2 (1 driver and 1 gunner).

Armament: L.M.G. in turret.

Armor: 0.31 to 0.55 inch thickness.

Communications: Flag.

Dimensions: Length: 10 feet, 2 inches.
Width: 5 feet, 9 inches.
Height: 5 feet, 4 inches.

Weight: 3 tons.

Motor: Type 4-cylinder, air cooled, 45 h.p.

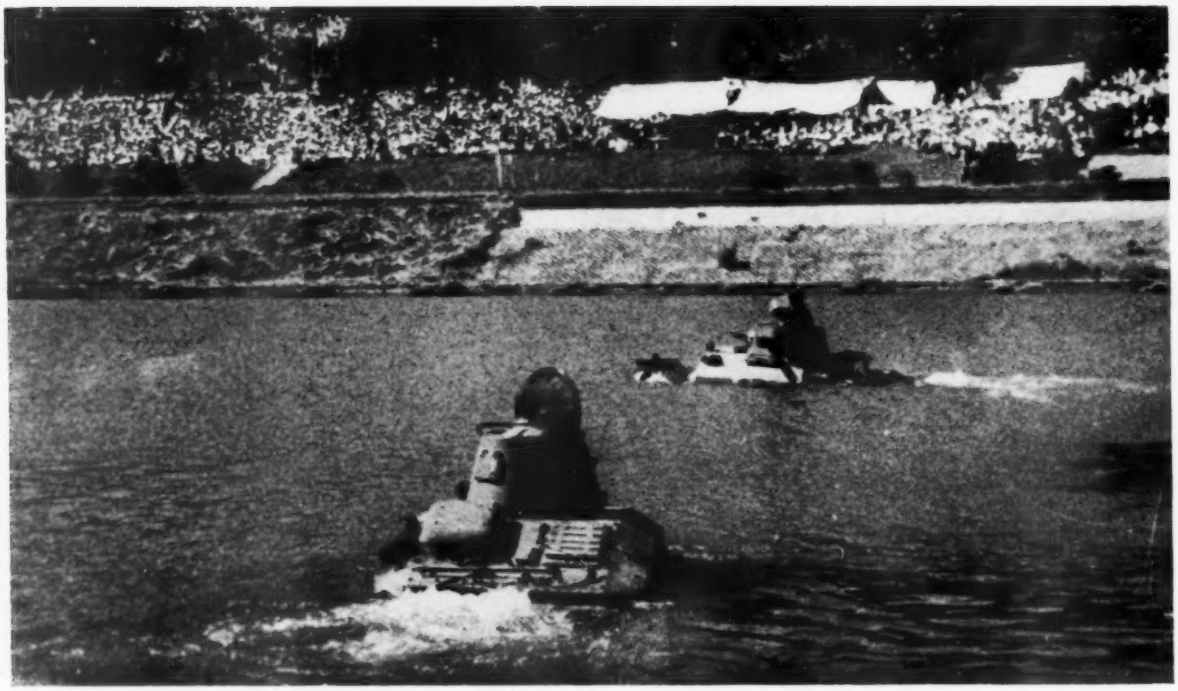
Steering, brake or controlled differential: Front sprocket.

Maximum Speed: 30 m.p.h.

Suspension type: 4 bogie wheels. 2 bogies, Carden Lloyd system.

Ground clearance: 1 foot, 1 inch.

Remarks: Also known as light armored vehicle, used with trailer for supply and intercommunication.



AMPHIBIOUS MODEL (EXPERIMENTAL) LIGHT TANK

Japanese tanks, according to American and European standards of types, are of much lighter construction.

Tankette M 2595 (1935) has a crew of two men, carries one 37-mm. gun in turret and two machine guns in hull fore.

Armor: 0.47 inch.

Length: 13 feet, 9 inches; Height: 6 feet, 5 inches.

Weight: 4 tons; 70 h.p.; Maximum Speed, 22 m.p.h.

Tankette M 2598 (1938) has a crew of three men (1 driver and 2 gunners), carries one machine gun in turret and one machine gun in hull fore. Armor: 0.55 inch; Length: 10 feet, 3 inches; Width: 5 feet, 9 inches; Height: 5 feet, 4 inches; Weight: 3 tons; 55 h.p.; Maximum Speed: 33 m.p.h.

Light Tank M 2593 (1933) has a crew of 3 men; one machine gun in turret, and one machine gun in hull fore. Armor: 0.86 inch; Length: 14 feet, 8 inches; Width: 5 feet, 11 inches; Height: 6 feet; Six cylinder, 85 h.p.; 28 m.p.h. Six bogie wheels, 3 bogies. Fords streams 2 feet, 8 inches deep. Also, experimental amphibious model.

Light Tank M 2595 (1935). 3 man crew, carries one 47-mm. gun in single turret, two 7.7-mm. machine guns in hull fore. Armor: 0.47 inch; radio communication; Length: 14 feet, 9 inches; Width: 6 feet, 6 inches; Height: 6 feet, 6 inches; Weight: 7.7 tons; 110 h.p.; Maximum Speed: 22 m.p.h.; Fords streams 3.2 feet deep.

Light Tank M 2599 (1939). 3 man crew, carries one 37-mm. gun and one machine gun. Armor: 0.63 inch; Length: 16 feet, 6 inches; Width: 5 feet, 8 inches; Height: 7 feet, 4 inches; Weight: 7 tons; Four cylinder, Diesel motor; 45 h.p.; Maximum Speed: 12½ m.p.h.

The photo of the light tank below was made in Peiping, China.

(Continued from page 4)

and its coördination with the advance of the tanks; plan for meeting a counterattack by hostile tanks; signal communications between infantry tanks, and artillery. On the night preceding the attack, the tanks move to jump-off positions under cover of the noise of artillery firing and low-flying airplanes. Attack formations aim at obtaining the effect of mass by disposing the tanks in several waves across the front of the infantry unit to which attached. The tanks move forward followed closely by the infantry and supported by the artillery which neutralizes enemy antitank weapons by fire and smoke. Tank objectives are: obstacles blocking the advance of the infantry; the enemy automatic weapons left unneutralized by the artillery; eventually, the hostile artillery and command system. The infantry must stick close to the tanks; if the latter get too far ahead, they may have to turn around and rejoin the infantry.

The foregoing discussion applies particularly to the attack of a position where the need for tanks is especially acute. In the meeting engagement, the tactics of the tanks are in general the same except that preparations and liaison arrangements are not so detailed and the attack moves more rapidly. In a favorable situation, the division commander prior to the main attack may send out all or part of his tanks ahead of the advance guard to upset the hostile deployment and derange the command system of the opposing force. In such a case, the tanks are given a rendezvous point where they assemble and return to the main body in time for use with the principal attack.

Leading tanks.—It is doubtful whether the Japanese have had actual experience in the use of leading tanks, although the new Combat Regulations contemplate their use in cases where tanks are available in plentiful numbers. The Japanese first satisfy the requirements for accompanying tanks; those in excess of this requirement are organized into a leading tank detachment under division control. Taking off several minutes ahead of the main attack, they rush deep into the zone of the hostile artillery and command system. They are given a zone of action, a rallying point, and mission type of order to include the subsequent course of action. Artillery support is planned carefully to cover the tanks through the forward area of hostile antitank weapons. Long-range artillery coördinates its fire with the movement of the tanks so as not to interfere with their progress.

Miscellaneous uses of tanks.—The following miscellaneous uses of tanks have been noted in the China War:

Tanks break through the defenses at the mouth of a defile, reconnoiter the inner defenses, and return.

Tanks execute local battlefield liaison and reconnaissance missions as well as transport essential supplies in the areas beaten by the Chinese small-arms fire.

Tanks are the main force in a frontal holding attack, while the remainder of the division envelops a flank.

Tanks block the escape of fugitives through the rear gates of walled towns.

Defensive.—On the defense, the division commander usually holds his tanks initially in division reserve under cover from artillery fire and attack from the air. Eventually they are attached to the infantry making the division counterattack. They are particularly valuable in stopping a hostile mechanized force, as the defensive tanks can defeat a superior number of the enemy tanks if the latter have run away from their artillery support or have become dispersed. Occasionally, the defending commander may use his tanks, before the enemy attacks, in a raid on the hostile assembly areas. In all cases, tank actions must be supported by carefully arranged artillery fire to neutralize the hostile antitank guns.

Mechanized Units

Organization.—As previously indicated, the Japanese have in China provisional mechanized units varying in size and composition, according to the matériel at hand and the mission to be accomplished. In general, these units have a strong nucleus of tanks supported by motorized infantry, engineers, field and antiaircraft artillery, anti-gas, and signal detachments. The whole force is supplied by a truck train formed from line of communication (heitan) supply units. Observation aviation is usually attached.

Tactics.—Offensive.—A mechanized force normally receives an offensive mission whereby full advantage can be taken of its high mobility and capacity for independent action. In general, its tactics are about the same as those of a large cavalry force. By secrecy and rapid movement (usually at night) it surprises the enemy force in a terrain suitable for the tanks which form the backbone of the combat strength of the command. The commander, keeping his tanks under central control, masses them for a quick blow in a vital attack direction. The motorized infantry receives any or all of the following missions:

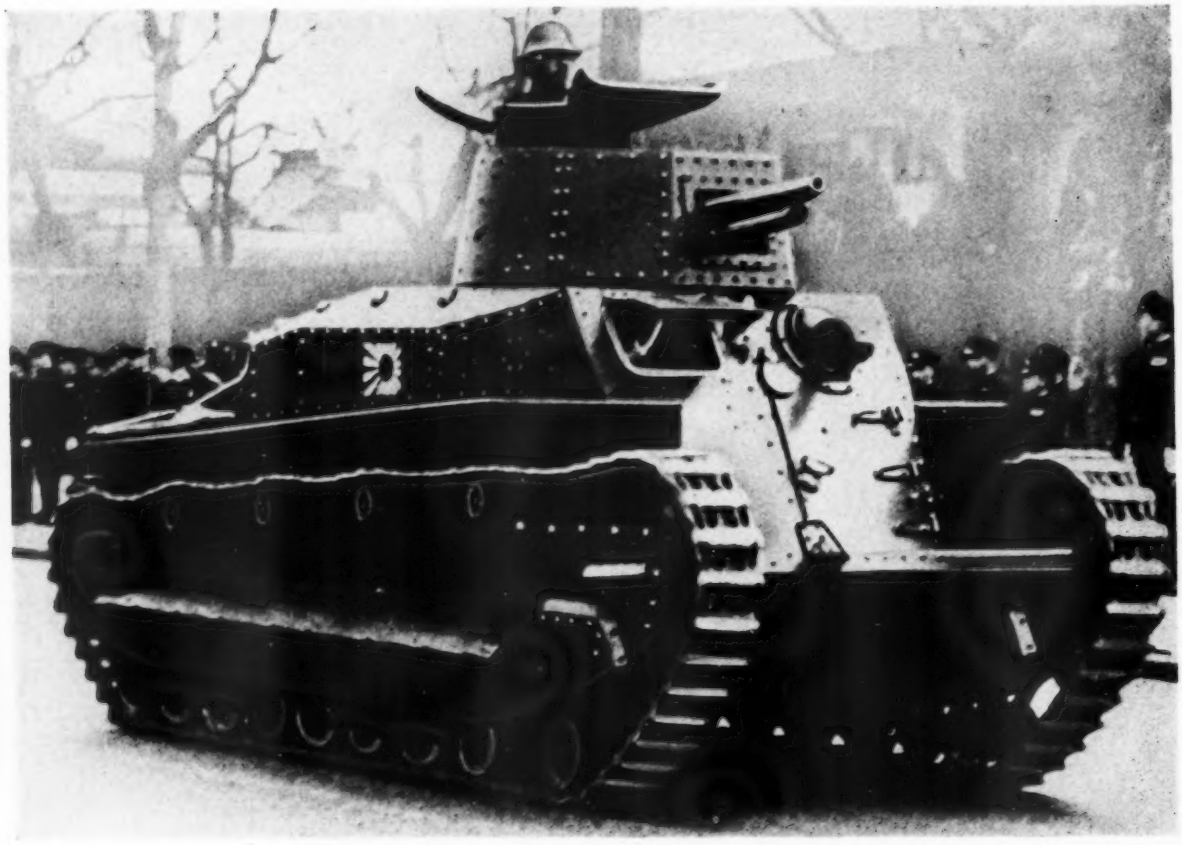
It covers the tanks and facilitates their action.

It holds the ground won by the tanks.

It occasionally takes over a front in the holding attack or makes an attack to create a diversion either by day or night.

The infantry always fights dismounted but stays in its carriers as long as possible. The artillery performs normal support missions with especial attention to enemy antitank guns.

As a mechanized force draws near the enemy, the commander prepares tentative plans to meet varying hypotheses, as the situation is susceptible to sudden changes in this fast-moving type of combat. He activates reconnaissance and security agencies, meanwhile gradually reducing the depth of his dispositions. As the enemy situation clears somewhat, he chooses an assembly area in conformance with his tentative scheme of maneuver. This area is as close to the enemy as is con-



This is a Japanese *Medium Tank M 2594* (1934). It has a 5 man crew, carries one machine gun in turret and one machine gun and one bomb in hull fore. Mortar inside. Ammunition: 6,000 rounds small arms, 120 rounds 37-mm. and 100 bombs. Armor thickness: Upper structure and front, 0.67 inch; Sides, top and rear, 0.43 inch; floor, 6 millimeters. Length: 20 feet, 10 inches (with tail); Width: 8 feet, 4 inches; Height: 8 feet, 6 inches; Weight: 14 tons; motor: 6 cylinder *Mitsubishi* airplane, air cooled; 160 h.p.; Maximum Speed: 28 m.p.h.; Operating distance without refill: 124 miles (210 gallons). Gear speeds and ratios: 8 forward and 2 rear; Suspension type: 9 bogie wheels (4 bogies, 1 independent bogie wheel); Ground clearance: 1 foot, 6 inches; Climbs 46° slopes; Negotiates vertical obstacle 3 feet high; crosses trenches 10 feet, 6 inches wide; fords streams 3 feet deep; used by army and navy landing party. Army model may have only one gun in turret; gun may be 47-mm.

sonant with safety. If there is danger of a sudden collision with the enemy, the commander may traverse the final distance between himself and the enemy by bounds from one terrain line to another.

A bold envelopment or a turning movement is the maneuver best suited to a mechanized force. Such a force will often march at night, assemble in darkness, and attack at dawn. In the assembly area, reconnaissance is made, order is restored, and missions are assigned for the subsequent attack. When the enemy situation is vague, the usual objective is a terrain feature the possession of which is essential to the enemy. In the final deployment troops remain in vehicles until the danger of hostile fire forces them to dismount. When this has occurred, empty vehicles are parked under cover from air and ground observation. The unit reserve is usually infantry but on occasion may include some tanks. The detailed conduct of the attack follows the tactics of a large cavalry force.

Mechanized units are particularly well adapted to pursuit and exploitation. The objectives assigned to them are those suitable to any pursuit detachment, but their range of action permits a deeper penetration into the hostile areas. It is in this form of action that the Japanese mechanized forces have found their chief employment in the China War.

Defensive.—Since the defensive nullifies the mobility of a mechanized force, it is a form of combat to be avoided, but it may be imposed by the situation. In such a case, the commander usually disposes his dismounted infantry in a discontinuous line of strong points with most or all of the tanks held in reserve. The defense is conducted along customary lines with the principal concern of the commander being the en-

gagement of his tanks in a counterattack. In the usual defensive situation the enemy will be superior in tanks; hence, the commander must endeavor to stage the decisive tank action out of range of antitank guns. Under such conditions, his inferiority in tanks is compensated for by the supporting fires of the artillery. When the hostile tanks are defeated the crisis is passed and the counteroffensive is often justified.

Comments

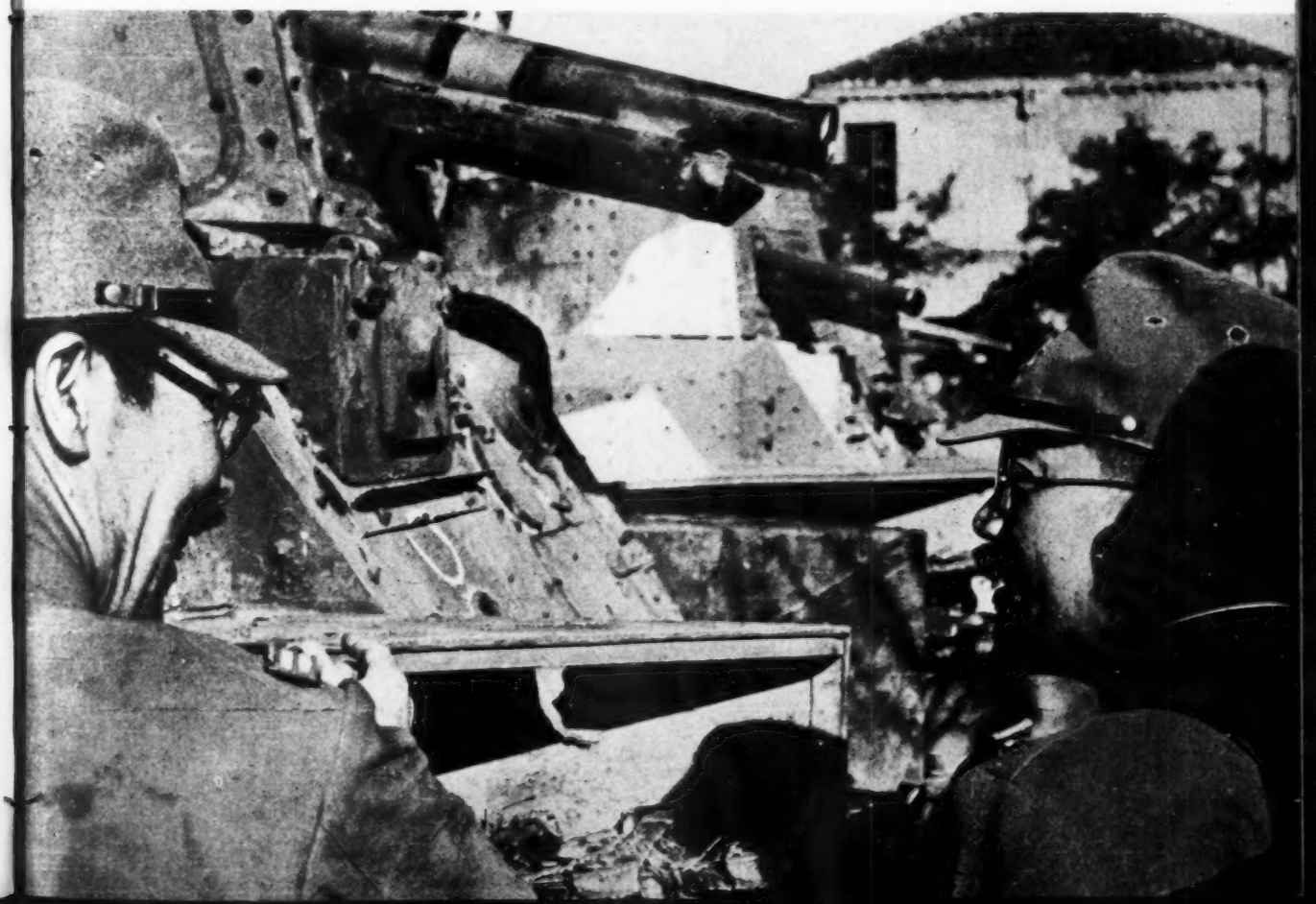
Mechanization is extending rapidly throughout the Japanese Army where its value is fully understood. The army has acquired considerable battlefield experience in small-scale tank actions and in the use of improvised mechanized forces. The V-front light tanks which recently were used by the Japanese in landing operations, fires armor-piercing ammunition from .50 caliber machine guns. Direct hits, from 37-mm. guns in some cases were deflected by the sloping front of this tank. Although these latter do not have the striking power of the elaborated mechanized forces of Western Powers, they secure most of the benefits of mechanization at a low cost. This question of cost is likely to be the critical limiting factor in the extension of mechanization in Japan, a country poor in foreign exchange and without a well developed automotive industry.

Note: *The photos herein presented were purchased from commercial photo agencies in New York; i.e., Acme Newspictures, Inc.; Black Star; European Picture Service; International Photo Agency; Press Association, Inc.; and Sovfoto.*

***AICHI HEAVY TANK, TYPE 2596* (1936)**

Crew: 10 (1 driver, 1 commander, 5 gunners, 2 loaders, 1 radio operator). Armament: one 75-mm., one 35-mm. in turret, and two machine guns in hull fore; Ammunition: 5,000 rounds small arms and 500 rounds HE; Armor: 1.38 inch; Length: 31 feet; Width: 10 feet, 8 inches; Height: 9 feet, 2 inches; Weight: 36 tons; Water cooled motor, 350 h.p.; Maximum Speed: 36 m.p.h.; Suspension type: six large bogie wheels; Climbs 40° slopes; Negotiates vertical obstacles 2 feet, 9 inches high; Crosses trenches 15 feet wide; Fords streams 4 feet, 2 inches deep. A modified form of Russian Tank 32-5.

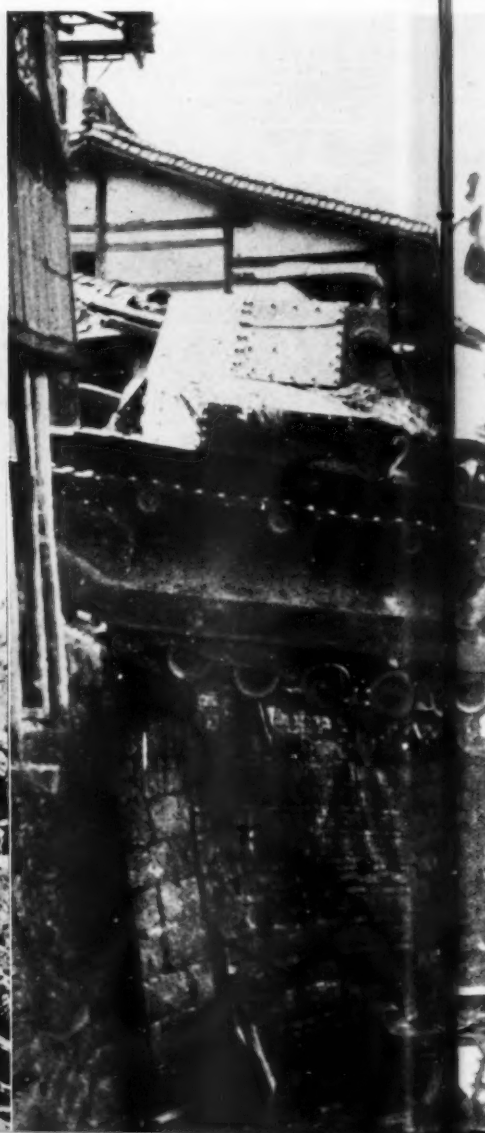
***Heavy Tank M2597* (1937). Modified from Russian T 28. Six man crew; two 37-mm. guns in turret and two machine guns in hull fore; Armor: 1.38 inch; Length: 24 feet, 5 inches; Weight: 35 tons; 250 h.p.; Maximum Speed: 28 m.p.h.; Crosses trenches 7 feet wide; Fords streams 4 feet, 2 inches deep.**



TANK OPERATIONS D

Chinese Walls

Weak Bridge



DIFFICULT IN CHINA

Bridges

City Gates

Japanese Antitank Defense

The Japanese envisage the inherent disadvantages of enemy tank operations to be—

Natural and artificial obstacles.

Long march columns which are difficult to camouflage.

Adverse weather conditions which may prevail.

Unfavorable working conditions and difficult observation which lower efficiency of crews.

Their antitank instruction stresses taking every advantage of these conditions.

Passive defense measures.—Concealment, camouflage, and calm nerves are of utmost importance. Reconnaissance and warning nets are considered essential.

Active measures.—These include:

Action by antitank guns, accompanying guns, and mortars.

Bullet splash from machine guns and rifles at a short range (at least one section firing at each tank).

Mines and "tank fighters." The latter comprise men with special training and equipment for direct assault on tanks.

Detailed method of attacking a tank.—It is desirable to choose ground where tanks must travel slowly and so as not to interfere with the action of antitank guns.

Each rifle company (sometimes machine-gun and heavy weapon companies organize smaller detachments) includes a section of special "tank fighters" which are especially equipped for action against tanks. Each man is armed with an antitank mine, a bomb, and a smoke hand grenade.

Three ways of attacking tanks are—

The tank fighter crawls toward the tank under cover, until he is within the dead space of the tank weapons. Next, he throws the mine, which is attached to a long string, about 15 feet in front of the tank and, by means of the string, pulls it directly under the tank.

Several pairs of tank fighters move forward under cover and place a number of mines in front of the tank in such a manner that the tank must drive over one of them.

A number of mines are fastened, 1 foot apart, to a 150-foot line. Two men conceal themselves with this chain of mines and draw the mines across the path of the tank as it approaches.

The tank fighter is also taught to attack the tank by jumping on top of the tank, usually from the rear, and damaging the guns or rotating mechanism of the turret with picks. The pistol may be used to fire on the crew through openings in the tank. Another method is to blind the tank crew by throwing a shelter-half over the turret or to smoke it out. Naturally, all these forms of assault are feasible only if the friendly infantry can neutralize the hostile infantry accompanying the tanks. Tanks have been delayed and stopped, finally, by driving 3-inch wooden poles or 1 to 1½-inch rods between the spokes of the tank wheels.

Tank congestion at Chinese wall evidence of improper tank employment.

Traffic congestion, result of narrow, winding, unimproved, Chinese roads and poor Japanese staff work.

Light armored car in Shanghai.

Heavy armored car model 1937.

This heavy armored car is adapted to operate also on Chinese railroads. It was used in the Japanese drive in Central China where guerrillas were active. It assisted in armored train operations and at times served as a prime mover for railway supply cars.

★ ★ ★

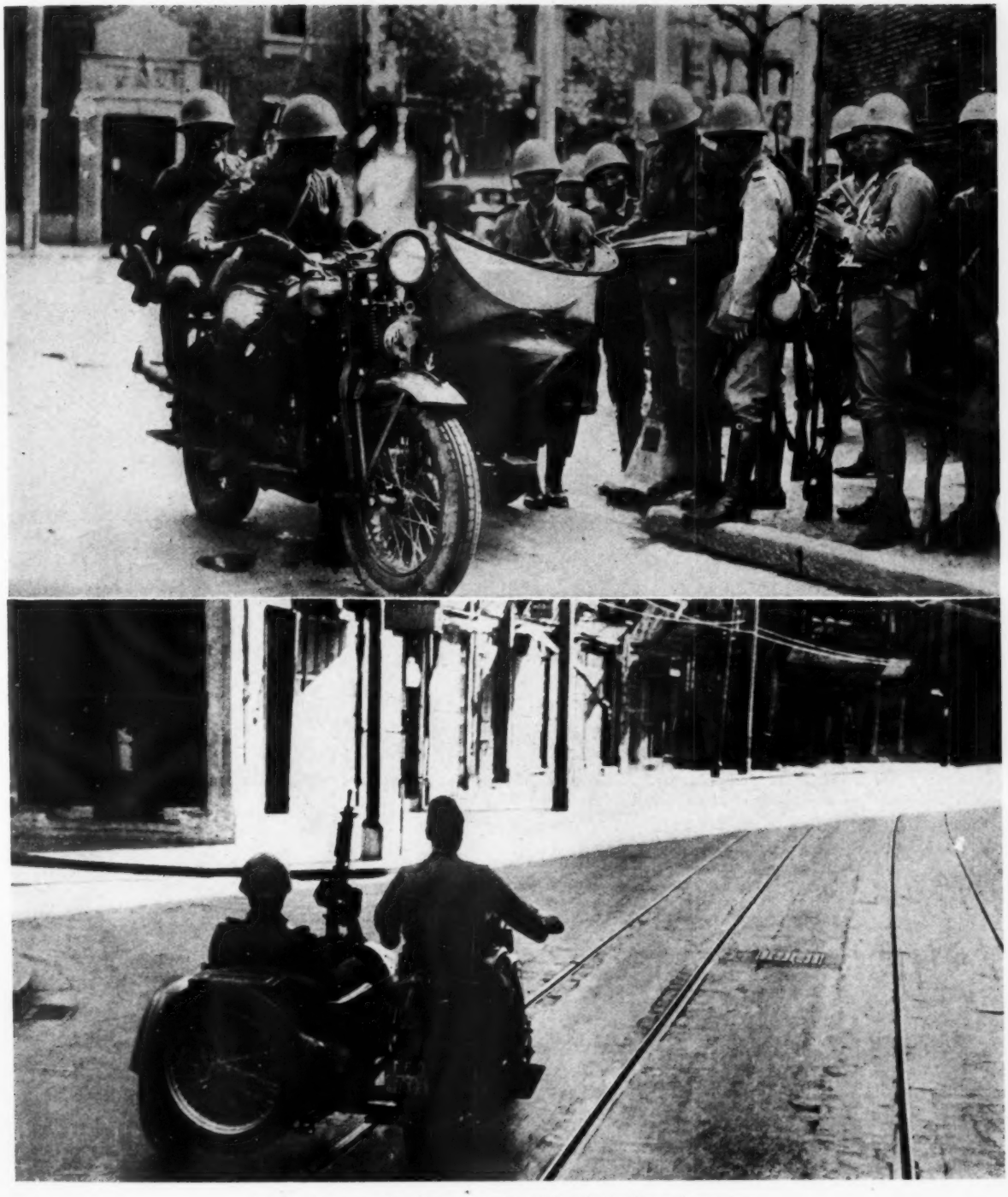
Tractors: In addition to locally made tractors, the Japanese have several hundred foreign, and more especially American-made Holt and Fordson tractors, principally for use in drawing the 105-mm. gun.

Trucks: The Japanese Army possesses a few thousand foreign trucks. Some of the locally made trucks are: Chiyoda, Sumida, Toyoda, Nissan, Isusu, Dowa (made in Mukden), and the Hitachi Diesel. The first three are patterned after the Wolseley (British) model. Some of these are 6-wheel trucks.

Improvisation: Here we see an American sedan on which a machine-gun turret has been mounted.

AMERICAN EQUIPMENT IS NOW BEING THROWN BACK AT US

In China, until now, the Japanese have feared guerrilla operations more than Chinese air attacks. Truck trains therefore are well guarded, and the columns move well closed for mutual protection.



Top: Japanese landing party in China halts for orientation.
Bottom: The Shanghai Patrol.

* * *

The Harley-Davidson (Japanese made) and the Kurogani are the types of motorcycles most used. The latter is a heavy, powerful machine but is poorly built.

Bicycles are extremely common, both in and out of the service.

MOTOR TRICYCLE
This vehicle is used as a personnel carrier and for transporting documents, rations, ammunition, baggage, etc.

Japanese Military Terms and Characters

Military Terms

The following is a list of military terms and their Japanese equivalents which may be useful to unit intelligence officers:

Military term	Japanese equivalent
Army	Rikugun.
General staff	Sanbō hombu.
Chief of general staff	Sanbō sōchō.
Navy	Kaigun.
Navy department	Kaigun shō.
Grade	Kaikyū.
General officer	Shōkan.
General	Taishō.
Lieutenant general	Chūjō.
Major general	Shōshō.
Field officer	Sakan.
Colonel	Taisa.
Lieutenant colonel	Chūsa.
Major	Shōsa.
Company officer	Ikan.
Captain	Tai-i.
First lieutenant	Chū-i.
Second Lieutenant	Shō-i.
Noncommissioned officer	Kashikan.
Warrant officer or special duty sergeant major	Tokumu sōchō.
Sergeant major	Sōchō.
Sergeant	Gunsō.
Corporal	Gochō.
Soldier	Hei, heitai.
Superior private	Jōtō hei.
First class private	Ittō hei.
Second class private	Nitō hei.
Grade	Kaikyū.
Army (unit)	Gun.
Army headquarters	Gun shireibu.
Army commander	Gun shireikan.
Division	Shidan.
Division headquarters	Shidan shireibu.
Division major general attached to	Shidan shireibuzuki shosho.
Division commander	Shidan chō (chūjō).
Division artillery	Shidan hōhei.
Division cavalry	Shidan kihei.
2 brigades of infantry	Hohei niko ryodan.
1 regiment of cavalry	Kihei ikko rentai.
1 regiment of field or mountain artillery	Yahōhei, moshiku wa sanpōhei, ikko rentai.
1 battalion of engineers	Kōhei ikko daitai.
1 battalion of transport troops	Shichōhei ikko daitai.
Brigade	Ryodan.
Reinforced brigade	Konsei ryodan.
Composite brigade	Shūsei ryodan.
Brigade cavalry	Ryodan kihei.
Infantry brigade	Hohei ryodan.
Cavalry brigade	Kihei ryodan.
Heavy field artillery brigade (There is no light artillery brigade organization.)	Yasen jū hōhei ryodan.
Regiment	Rentai.
Regiment headquarters	Rentai honbu (not shireibu).
Regiment commander	Rentaichō.
Regiment adjutant	Rentai fukukan (fukkan).
Battalion	Daitai.
Battalion headquarters	Daitai honbu.
Battalion commander	Daitaichō.
Battalion adjutant	Daitai fukukan.
Company, troop, battery	Chūtai.
Company (troop, battery) headquarters	Chūtai jimushitsu (not hombu).
Platoon	Shōtai.
Company (troop, battery) commander	Chūtaichō.
Platoon commander	Shōtaichō.
Squad	Buntai.
Squad commander	Buntaichō.
Detachment	Butai.
Arms or services	Heika.
Arms	Honka.
Infantry	Hohei (aka) (really hi) (red).
Cavalry	**Kihei (midori) (green).**
Artillery	Hōhei (kiiro) (yellow).
Light field	Ya hō hei.
Mountain	Sanpō hei.
Heavy field	Yasen jūhōhei.
Antiaircraft	Kōsha hōhei.
Heavy	Jūhōhei.
Engineers	Kōhei.
Transport corps	Shichō hei.
Air	Kōkū hei (sorairo) (really usu konjō) (sky blue).
Military police	Kenpei (kuro) (black).
Staff services	Kakubu.
Medical	Eiseibu (fuka midori) (dark green).
Veterinary	Jū-ibu (murasaki) (purple).
Intendance	Keiribu (gincha) (silver tea).

NAVAL TERMS

Auxiliary gunboat	Tokusetsu hōkan.
Battleship	Senkan.
Battle cruiser	Jun-yō senkan.
Cruiser	Jun-yōkan.
Coast defense vessel	Kaibōkan.
Combined destroyer group	Kuchiku rentai.
Destroyer	Kuchikukan.
Division	Shōtai.
Destroyer unit	Kuchikutai.
Mother ship	Bokan.
Aircraft tender or mother ship	Kōkū bokan.
Destroyer mother ship	Suirai bokan.
Mine sweeper mother ship	Sōkai bokan.
Airplane; flying machine	Hikōki.
Fleet	Kantai.
Land airplane	Rikujō hikōki.
Seaplane	Suijō hikōki.
Gunboat	Hōkan.
Combined fleet	Rengō kantai.
Gunboat unit	Hōkantai.
Naval gun	Kaigunhō.
River gunboat	Kayō hōkan.
Submarine	Sensuikan.
Squadron; flotilla	Sentai.
Destroyer squadron	Suirai sentai.
Submarine unit	Sensuitai.
Submarine squadron	Sensui sentai.
Salvage ship	Kyūnansen.
Torpedo boat	Suiraitei.
Minesweeper	Sōkaitei(sen).

Important Military Characters

Arms, services, and units.

Infantry Hohei	Cavalry Kihei	Artillery Hōhei	The first character alone means army (gun); with second character, corps (gundan).	Division Shidan	Brigade Ryodan
歩兵	騎兵	砲兵	軍團	師團	旅團

Regiment Rentai	Battalion Daitai	Company (troop battery) Chūtai	Platoon Shōtai	Engineer Kōhei
聯隊	大隊	中隊	小隊	工兵

近衛 Konoe, the Imperial guards; used for units of the Imperial Guards Division.

航空兵 Kōkūhei, the air service (a new word).

Numbers.

One	Two	Three	Four	Five	Six
一	二	三	四	五	六

Seven	Eight	Nine	Ten	Hundred	Thousand
七	八	九	十	百	千

○ Zero, used generally where our zero is used, though the character for ten is sometimes used.

Grades of officers.—Characters showing officers' grades are given as follows:

Company Officers.

Captain Taii	First lieutenant Chūi	Second lieutenant Shōi
大尉	中尉	少尉

Field Officers.

Colonel Taisa	Lieutenant colonel Chūsa	Major Shōsha
大佐	中佐	少佐

General Officers.

General Taishō	Lieutenant general Chūsho (or chūjō)	Major general Shōshō
大將	中將	少將

Characters On Identification Tags

Enlisted man.—Identification tag of an enlisted man. Reading from top to bottom the first character gives the arm or service, followed by regimental number, a small dash, and ending with the serial number of the man in his regiment. The following reads, "Infantry 56 (regulation), No. 147."

Officer.—The following is an officer's identification tag which gives in order from top to bottom, arm or service, grade, and name. This tag reads, "Infantry, first lieutenant, Yamamoto."

Note.—In all enumerations the Japanese habitually use the order MP, Inf., Cav., Arty., Engrs., Air Service, Transport, abbreviated sometimes to Ken, Ho, Ki, Hō Kō', Kōkū, Schichō.

Reading identification tags.—Japanese is read from top to bottom and from right to left. The characters here used are Chinese characters adapted by the Japanese. One, two, three, or more characters constitute a word. The dash on the enlisted man's tag separates the regiment number from the man's serial number in the regiment. The arm of service is frequently abbreviated

and the first character only used. This is true on the enlisted man's tag. In case of engineers, "battalion" is substituted for "regiment." A detailed explanation of the reading of tags follows:

Enlisted Men.

騎 One character here shown—ki for kihei, cavalry.

三 One or more characters for number of regiment (in this case 23).

- Dash separating regimental number from serial number of man in regiment.

四一九 Serial number of man in regiment. One or more characters (in this case 419).

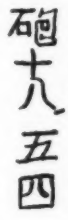
Officers.

工兵 Generally two characters for arm of service (here engineer).

大尉 Two characters for rank (here captain).

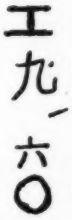
田中 One, two, three, or four characters for name of officer (here Tanaka).

Examples.—The following are examples of the translation of identification tags:



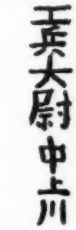
砲十八 Artillery. 18th Regiment.

五四 No. 54.



工九 Engineer. 9th Battalion.

六〇 No. 60.

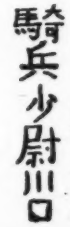


工兵大尉 Engineer. Captain.

中上川 Nakami-gawa.

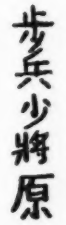
歩兵中尉 Infantry. First Lieutenant.

本西 Motonishi.



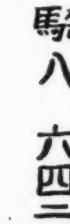
騎兵少尉 Cavalry. Second lieutenant.

川口 Kawa-guchi.



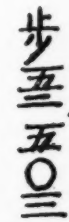
歩兵少將 Infantry. Major general.

原 Hara.



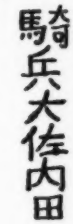
騎八 Cavalry. 8th Regiment.

六四二 No. 642.



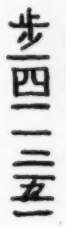
歩五二 Infantry. 52nd Regiment.

五〇三 No. 503.

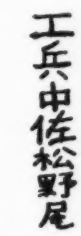


騎兵大佐 Cavalry. Colonel.

内田 Uchida.

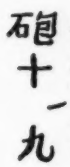


歩二四一一三五一 Infantry. 141st Regiment. No. 1,251.



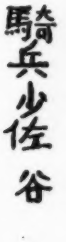
工兵中佐 Engineer. Lieutenant Colonel.

松野尾 Matsunō.



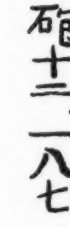
砲十一九 Artillery. 10th Regiment. No. 9.

歩七六四四二 Infantry. 76th Regiment. No. 442.

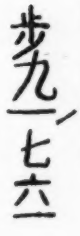


騎兵少佐 Cavalry. Major.

谷 Tani.



砲十三一八七 Artillery. 12th Regiment. No. 187.



歩九一七六一 Infantry. 91st Regiment. No. 761.

READ THE IDENTIFICATION TAGS. IT IS NOT DIFFICULT. THE NUMERALS ARE EASY TO REMEMBER.

Japanese Cavalry

For detailed discussion of JAPANESE CAVALRY see the January-February 1942 issue of The Cavalry Journal.

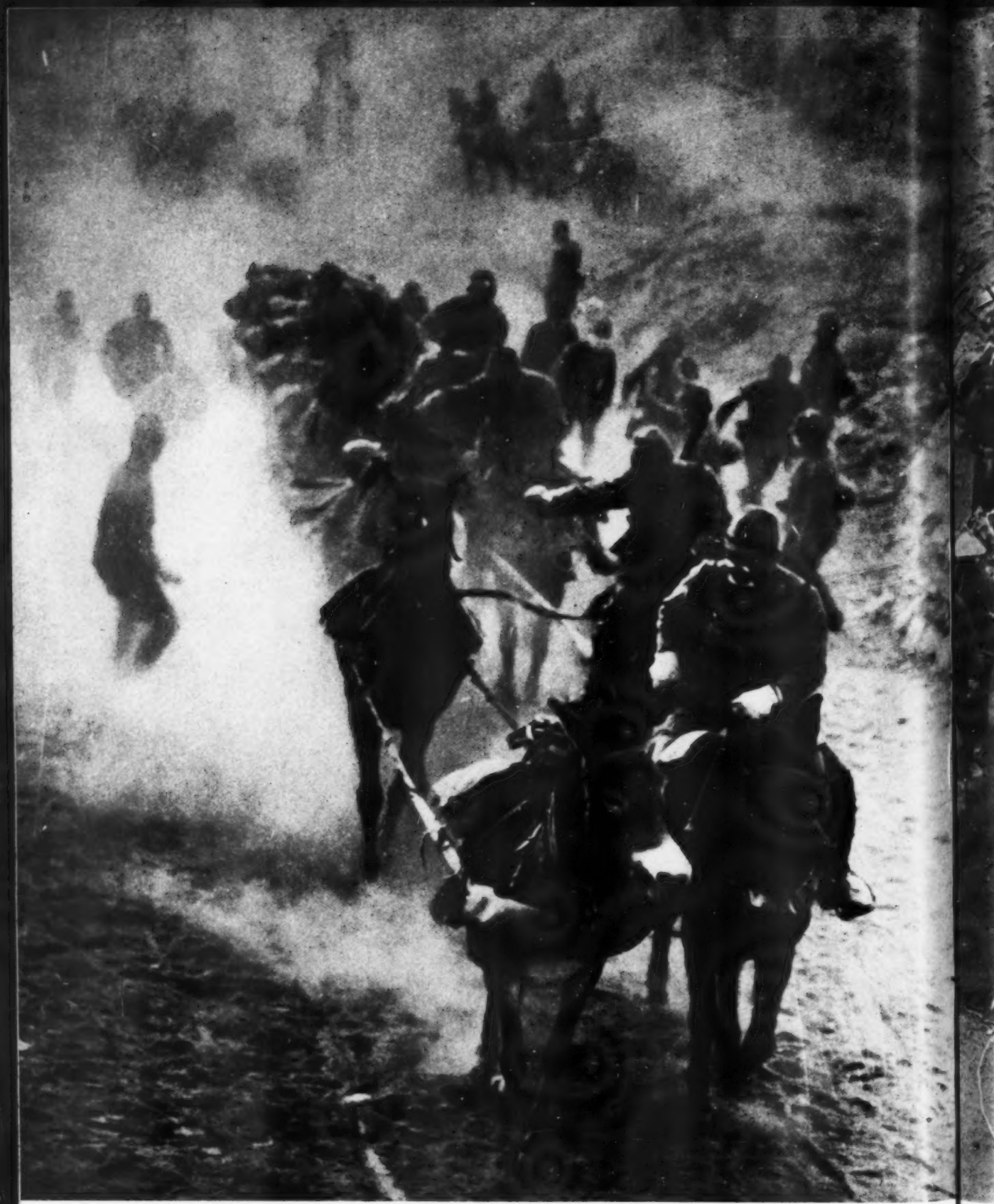
The Japanese have made effective use of their Cavalry in China in areas not suited to mechanized employment.

Japanese cavalry bivouac; prior to advancing into China's rugged mountain vastness.

Japanese cavalry penetrated areas in China prohibitive to motor vehicles.

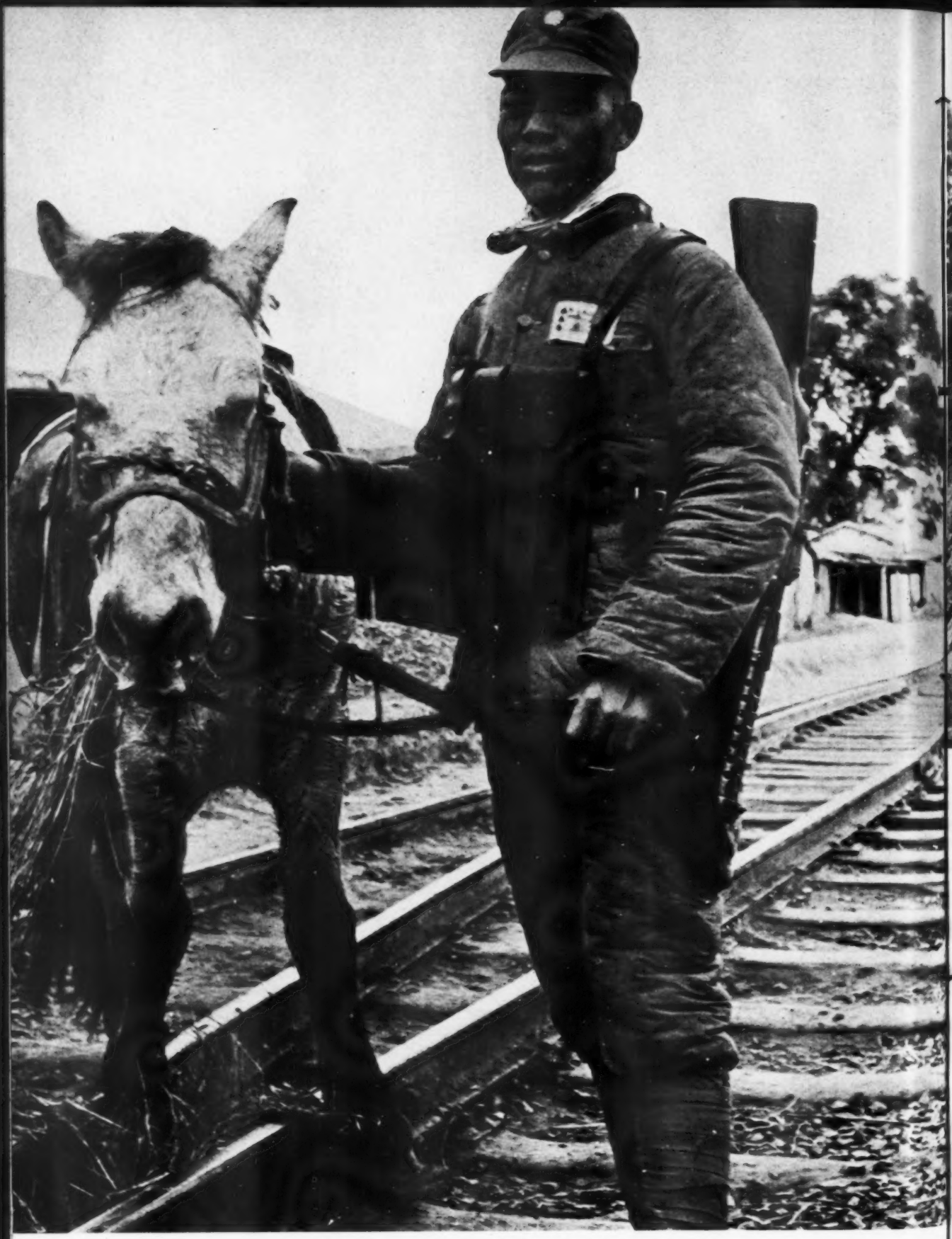
★ ★ ★

Below, it can be noted that the cavalry tank support cannot follow the cavalry across the water-covered fields. The soggy ground in the low-lands nullified much of the effectiveness of formidable combat vehicles.



China's "GOOD EARTH" does her bit in mud and dust to help retard the ruthless invaders.

Chinese roads constantly present grave problems for Japanese Engineers and supply echelons.



A Chinese Dispatch Rider. . . . and "more power to him!"

The Japanese Infantry in China exploit the use of horses in every possible instance. Illustrated above is the *Infantry Battalion Gun, Model 92 (Kyunishiki hoheiho).*

INFANTRY BATTALION GUN

It is a 70-mm. rifled gun capable of delivering fire from range of 200 to 2,800 yards. Its characteristics are:

Weight:		
Gun	101	pounds.
Mount	77	pounds.
Mounted gun and caisson	420	pounds.
Length of bore	30	inches, approximately.
Over-all length	27	inches.
Mounted over-all length	5	feet, approximately.
Width of wheel tread	27	inches approximately.
Effective range	300	to 1,500 yards.
Traverse	45°	
Elevation	—10°	to +50°.
Danger area of burst	40	yards, approximately.

Breechblock.—Two threaded segments, rotating and opening downward.

Carriage.—(a) Recoil mechanism.—Length of recoil, about 4 inches.

Traversing and elevating mechanism.—Traversing handwheel on the left of the barrel and elevating handwheel on the right. Both handwheels are operated by the gunner, who lays first for direction, then for elevation. Elevating mechanism is similar to that of our old pack howitzer. Traverse is about a heavy pintle mounted on the axle.

Shield.—Armor plate about one-eighth of an inch thick.

Trail.—Split 5 feet long, welded except where riveted to spade.

Panoramic sight (same as field artillery).—Mounted on the sight bracket on the left side of the piece. The sight bracket includes a range drum with four divisions marked in mils, an elevating bubble, and a cross bubble for correcting for difference in levels of wheels.

Ammunition.—Semifixed with brass case. High explosive shrapnel and smoke shells are used. The range is extended by increasing the powder charge. At maximum range the time of flight for the different powder charges is—

Charge No. 1.....30 seconds (3,075 yards).
Charge No. 2.....25 seconds (1,975 yards).
Charge No. 3.....20 seconds (1,300 yards).
Charge No. 4.....15 seconds (985 yards).

Minimum permissible ranges with instantaneous fuzes employing low-angle fire varies with the powder charge, elevation of gun, and target. With ground level ranges are—

Charge No. 1.....1,100 yards.
Charge No. 2..... 660 yards.
Charge No. 3..... 225 yards.
Charge No. 4..... 110 yards.

Minimum ranges with delayed action fuzes ground level are—

Charge No. 1.....660 yards.
Charge No. 2.....330 yards.
Charge No. 3.....330 yards.
Charge No. 4.....330 yards.

Rate of fire: 10 rounds per minute, 5 rounds per box.

Other vehicles.—Limber.—This is a simple box mounted on an axle. Shafts are solidly attached to limber chest and to breast collar of the draft horse. Two boxes of ammunition, sights, and accessories are carried in the limber chest.

Caisson.—Similar in construction to the limber and contains three boxes of ammunition.

Transport.—**The gun and ammunition caisson in tandem are pulled by a single horse.**

SIGNAL COMMUNICATIONS
and Equipment

Fishing boats and lights are known to have aided the Japanese in some of their landing operations in the Philippines. However, the complete extent to which fifth columnists have been used is not known.

Close liaison between Japanese air forces and ground troops is being maintained by means of portable radios. These are equipped with earphones, and are carried on the chest by commanding officers of companies.

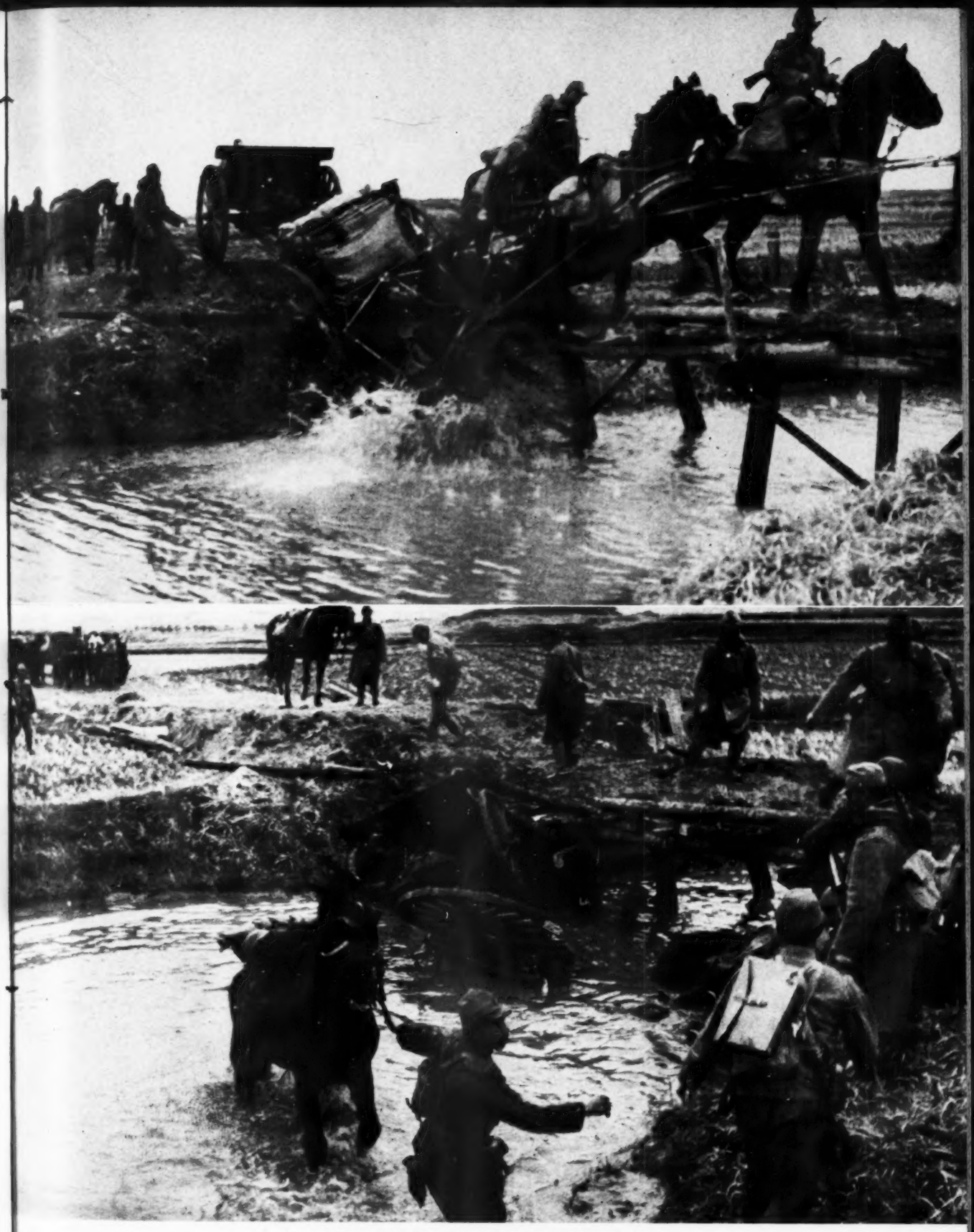
With air superiority, the Japanese are able to observe the positions of the Allied front lines and troop dispositions and movements. This information is then relayed to the Japanese commanders, who, in many instances, are told when to move forward and when to halt.

The Japanese infantry, armed with grenades and automatic weapons, have obtained great mobility by leaving behind all other equipment not absolutely necessary. Their attacks usually are made at daybreak. Company commanders move up their companies by squads, and consolidate them with advance security detachments prior to the attack.

In Malaya, heavy motor vehicles have been used sparingly, for in the low, soggy terrain they tended to become canalized on any road that was not hard-surfaced. The Japanese have equipped and trained their soldiers in Malaya to travel for days through jungles with all their supplies either in their packs or on small transport vehicles.

Three types of machine guns were reported in use by the Japanese in the Malayan campaign—a Thompson-type submachine gun; a type "96" light machine gun; and a belt-fed medium machine gun. The latter, mounted on a wheeled carriage, is like the British Vickers gun except that the Japanese weapon has a larger water jacket.

THE JAPS FULLY UTILIZE ALL CAPTURED EQUIPMENT AND ARE TRAINED IN THE USE OF ENEMY WEAPONS



A JAPANESE MISJUDGMENT

Our sympathy is extended *ONLY* to the horses - - - .

Landing Operations

Japanese landing operations have been organized as follows:

Preparation.—Landing sites have been carefully reconnoitered beforehand, either by aircraft or by the work of secret agents in peace. Troops earmarked for landing operations have been assiduously practiced beforehand.

Rendezvous of transports. — Transports and motor landing craft carriers rendezvous at some convenient anchorage the night before the landing. Where no anchorage is available the transports have arrived off the landing point about the middle of the night.

Operation of landing.—Landings usually take place just before dawn on a day when it is high tide just after dawn. Periods of rain or stormy weather are chosen when possible so as to facilitate surprise. Men are transferred from transports and motor landing craft carriers to landing craft just off the site of landing. The initial force usually consists of infantry, some field artillery, engineers, and *light tanks,* all of which are embarked in motor landing crafts. These make for the shore at full speed, and if in formation all craft shut off their engines and drop their stern anchors together when a short distance off the beach. For the remainder of the distance the boats are eased in until grounded by means of the hand brake on the stern anchor cable. The boats normally ground at about 50-yard intervals. If the operation warrants the boats' leaving immediately, the stern anchors are weighed by hand or power and the boats make off at full speed. Military patrol craft armed with pompoms and machine guns give close support to the landings while air and naval support is provided as required. Once a beach head his established the main forces landed proceed inland as fast as possible.

Air and naval coöperation.—The Japanese have had complete air and naval superiority in all their landing operations on the China and Philippine coast. Sea communications have thus always been secured and all landings have had overwhelming support from sea and air. On one occasion Japanese destroyers assisted the land forces by gun fire. In order to ensure surprise, naval fire may be withheld until after the landing of the first flight. Owing to the complete air superiority the Japanese appear to make little or no provision for antiaircraft protection. This fire took the following forms:

Preliminary bombardment of enemy positions at a range of about 1,300 yards.

"Howitzer" fire on special areas. This was achieved by putting extreme elevation on the ships' guns and using a small charge.

Forces used. — Almost all Japanese landings were made with a force of two divisions (40,000 men). These appear to have landed with normal equipment, which usually includes light tanks (3 tons), 10.5-cm, field howitzers, 75-mm. field guns, etc.

Conclusions. — The following factors were instrumental in giving the Japanese the successes they achieved in China:

Complete security of sea communications.
Overwhelming naval support.
Overwhelming air support.
Inefficiency of enemy watching organization.
Lack of enemy real opposition on landing.
Complete lack of enemy action at sea.

Enemy lack of artillery, which made the establishment of a beach head of little depth sufficient to cover the main landing.

Japanese use of aircraft for supply dropping and bombing which lessened the administrative difficulties of landing transport and artillery in the early stages of the operations.

Policy of Japanese, owing to lack of opposition, to bring their transports close to the shore before transferring men into landing craft.

Care taken to achieve surprise by choosing difficult landing sites and poor weather conditions.

Jap Officers

A typical officer of the Japanese armed forces is likely to be younger than his American counterpart and the product of a much narrower education. He is likely to be as much or more of a specialist than the American, but is the product of a school which stresses adherence to plan rather than individual initiative.

The greater physical stamina the Japanese may bring to a campaign by reason of his relative youth is offset, particularly in higher ranks, most students believe, by the broader training and experience of the American. This is especially true of naval officers.

Japanese officers, as a group, probably work harder than either American or British and take less recreation. They tend to learn by rote, memorizing procedure originated by others.

American type individualism is officially discouraged. The Japanese like to act as a group, upon group judgment. The army copies Germany. The navy always has studied British naval practice.

The system tends to produce an officer utterly proficient, scrupulous and reliable in the performance of duties. In courage the Japanese officer probably is surpassed by none. He is at his best in executing plans carefully made in advance.

But let unexpected developments particularly reverses, upset pre-arranged plans, students assert, and the Japanese officer is likely to go to pieces.

Plate, courtesy of The Infantry Journal

The odd-looking weapon of this naval landing party is the 1922 Nambu light machine gun. Air-cooled and gas-operated, it weighs 22½ pounds and fires 6.5-mm. rifle ammunition fed by ordinary five-round straight Mauser-type clips. The high-comb buttstock makes it look something like our tommygun and the thick cooling rings on the barrel heighten its odd appearance. Bipod legs fastened near the muzzle are folded down.

THEY RIDE AGAIN

New Role for Australia's Renowned Light Horse

*By David W. Bailey**

TO the Japanese advance through Malaya to Java, Australia has reacted sharply with maximum mobilization of weapons and resources of resistance and war, basing her defense upon the strategy of converting a beleagured continent into an Allied Pacific counter-offensive springboard. Two thousand miles deep and 2,500 miles wide, that Continent has vast space in which to deploy the strength it will oppose to any invasion. But since at many points on the 12,000 miles coastline an enemy may land his forces, mobility exceeding any effort of that kind in her history must characterize her military defense. It may be assumed therefore that in her present mobilization she will bring into play not only every plane, tank, armored car, and gun carrier her factories can produce, but also every horse. Mounted infantry is still the potentially biggest mobile force in Australia. In event of invasion, a new type of guerrilla warfare with mounted troops is almost certain to develop as a natural answer to the new condition in which Australia finds herself, just as the Australian Light Horse gave to Egyptian Sinaian and Palestine campaigns in the war of 1914-18 a mobile striking power which best answered the requirements of that struggle with the Germans and Turks.

The classic example of mobility and striking power on land—coördinated or uncoördinated with air forces—until the present war, remained as the record of the Australian Light Horse, a formation peculiarly Antipodean. Only the armored divisions in the Polish, French, Greek, Cretan, Libyan, and now Russian, theaters of war, have surpassed its overpowering sweep upon all manner of obstacles from trenches to walled redoubts. Twenty-four hour assaults, and single dashing charges through miles-long screens of shrapnel and machine gun fire in Palestine ending with hand to hand bayoneting on the ground served more than once to put an enemy to rout, an enemy who has as reckless horsemen, as good artillery, and the arranged or adventitious aid of seemingly indifferent nomads.

Since in Australia's wideflung pastoral and agricultural life the horse remains such a factor, and the stockrider as essential as ever, it is obvious that the disturbance or threat to this economic life by any enemy thrust will call for the maximum use of the horse as a defensive and counteroffensive means. Therefore the Light Horse Brigades, never active in their homeland at more than 6,600, though sent in expeditions abroad at three times that strength for mainline and reinforcement, will probably this year and next outnumber the grand total of all previous A.L.H. Imperial expeditions and home establishments.

Like other fighting nations, Australia has mechanized her fighting forces to a degree far exceeding that of the mobility she had achieved through cavalry in earlier wars. Development of mechanization has left little room for the employment of mounted troops in the nine theaters of land action in which she has engaged in this war—Britain, Libya, Greece, Crete, Syna, Irak,

*Director, Austrailian News and Information Bureau, New York.

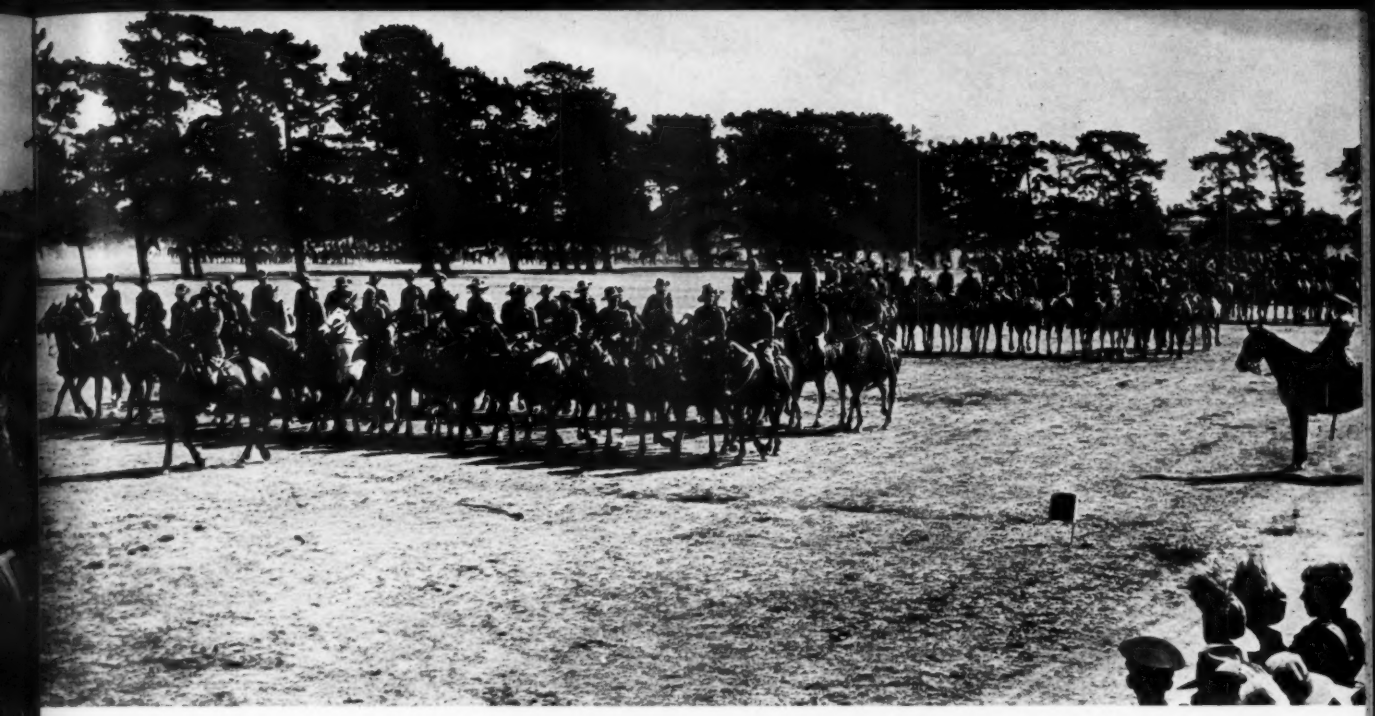
Malaya, Singapore, New Guinea, Java. Throughout Australia there has spread the desire for a "people's Army," and the Government has set up a Volunteer Defense Corps in answer to this. Already males of 18 to 35 have been called to the colors in the reorganized home defense Militia. The new Home Defense plan in its Militia and its Volunteer Defense organization find ready for use everywhere efficient bodies of horsemen. They can be relied on to function as a natural defense in the unusual opportunity for defense in depth which the continent presents.

At the outbreak of this war, the Light Horse was at a strength of about 6,000, just as at the outbreak of the war of 1914-18. In 1914 there were six Brigades, each consisting of three regiments, one battery of Field Artillery, one signal troop, one L. H. Brigade train, and one L. H. Field Ambulance. The Brigades were in peacetime distributed: One with three regiments in Queensland—the State with the longest Pacific and Northern coastline; two Brigades with a total of six regiments in New South Wales, the State with the second longest Pacific coastline (800 miles), and the foundation state for horse breeding; two brigades (four regiments) in Victoria on the southern extremity of the continent; one Brigade (two regiments) in South Australia; and one Brigade (one regiment) in Western Australia. Northern Territory (Darwin) a Federally-controlled area of 500,000 square miles with many cattle but few people, and the first place to get the shock of Japanese air attack, had no Light Horse establishment before this war. Such establishments, in such a vast continent, could of course only be regarded as nuclei, if, as we must now assume, war comes to the country in full force. Organization consisted of Regiment—600—under a Colonel; 3 Squadrons to a Regiment, each under a Major; 4 Troops (50 each) to a Squadron; 4 Sections to a troop.

In Palestine, the greatest single formation of A.L.H. at any one time was 12,000 in a Desert Column or Division of 19,000. In that Division were also New Zealand Mounted Rifles, British Yeomanry and French Cavalry. In the total mainline mounteds and reinforcements were upwards of 40,000 horses. The biggest strength then involved, will in Australia's new emergency present little difficulty to that country. She could raise that force of horsemen overnight—indeed has almost certainly done so—most of them requiring little other than military tactical training. The horses are saddled. The necessary men, most of them accustomed to the rifle are standing by. They may be relied on to hold now, better than they did any oasis in Palestine or Egypt, the lands that made them a particular kind of horse and horseman.

It was this matching of man and beast, this already determined relationship, that made the *Light Horse* so effective in war. Their life long background explains just what surprised an old-line General as he viewed the A.L.H. soon after their arrival in Egypt in the first days of war. These forces, brought to Egypt as a training base, seemed already trained. Years in the open country, stockriding, sheep droving, hunting in bushland and backblocks that gave the horse his surefootness, his leanshanked reliability, stamina and dash, had developed also in the horseman's great hardihood, keenness, initiative and dependability. These qualities together yielded the perfected individualized mobile unit for any emergency in peace or striking purpose in war. Not surprising either, that when the A.L.H. arrived in Egypt, its personnel regarded with astonishment exceeding the old-line General's British and other Dominion cavalry units that left important details unmounted. Australians could not understand this. They had come to war with a complex of complete mobility in their own units, regarding any unmounted attached or auxiliary unit as the impediment it was. It was Australian persistance that induced British officers

All over Australia the original "Anzacs" of Gallipoli, their sons and relatives are in training so that they may be able to defend their country. In this picture the Governor-General Lord Gowrie (third from left), is inspecting a parade of 2,000 Light Horsemen, whose slouch, omuplumed hats create a suggestion of devil-may-caredness.



Anzacs on Parade.

to abandon the practice of letting all but officer and warrant officer personnel in ambulance units walk, and to put them on horse instead.

The horse used in the A.L.H. formation is mostly a light lean type. He would be rejected for Cavalry. A century ago, Arab, English and Welsh breeds of horse were introduced to Australia. Their progeny reached its most specialized type in New South Wales. A hardy, leanshanked, medium height animal, known as the "Waler" still heavy enough for cavalry use, was evolved and figured in a military export trade to India as high as 20,000 a year. When the present war came, this trade was down to a few thousands a year because the type available ceased to be a cavalry horse. Three years after the Australian Light Horse had achieved its world renown in Palestine as the greatest single mounted force of modern times, General Sir Harry Chauvel who commanded the Desert Mounted Division, himself a most experienced horseman and mounted Police Trooper from Queensland, reported to the Australian Government that less than three per cent of Australian horses were up to cavalry or artillery standard. So much had the climate and pastoral demands modified the breed. These modifications, however, were the saving grace of the Waler as a horse for mounted infantry. This trend in horseflesh contributed to the renown of the A.L.H.

Australian Light Horse history began with the Boer War of 1899-1901 when it participated as the New South Wales Lancers. Twenty-two of the 24 modern peacetime regiments of the A.L.H. boast of descent from the Boer campaign though few of the veterans of 40 years ago remained to fight in Palestine.

The Light Horseman was then and still is a volunteer. Like the rest of the 700,000 men Australia has recruited for foreign service in two world wars, and the nearly 500,000 she had actually sent to those wars, he is part of the living eagerness of that people. He comes already a horseman. As a military specialized functionary he is almost unconscriptable. The foundation of his military life is already in his makeup. Men who volunteered for the A.L.H. usually came with their own horses. In the peacetime Militia service in which they did 12 to 18 days a year in military camp, they were allowed about $1.00 a day for upkeep of their own horses. Each man must be the complete companion and master of his horse, feeding, grooming him, tending him from picket line to outpost duty. This same personal responsibility marks the A.L.H. in war. It is part of the idea of mobility. In wartime, Government pays a volunteer about $80.00 for his mount.

Horsemen who may be called upon to serve in Home Defense today and for whom there is no horse regimental opportunity must serve of course as regular infantry or in some other branch of the army in which there may be need for him. The Light horseman is a complete infantryman, but mounted. As mounted infantry, the A.L.H. personnel were dismounted in Egypt and sent into the assault upon Gallipoli. They fought through that campaign, and 2,500 of the first 5,000 thus employed in Gallipoli survived, returned to Egypt, rejoined their horses and were reinforced by thousands of others. First important actions in which the A.L.H. engaged express the eagerness for offensive strategy that marks so much of the Australians' present-day mobilization against Japan. General Chauvel in 1916 took charge of the reorganization of this force and step by step, raid by raid, broke up the challenge in Sinai.

Until then the British defense rested upon a passive protective system devised by Lord Kitchener many years before. The dashing Light Horse soon overcame

the menace to the Canal, and this campaign gave it its first real taste of the dangers ahead. In the spring of 1916 18,000 Turks under Von Kressenstein were defeated by the Light Horse aided by the New Zealand Mounted Rifles, which in at the end of a day's resistance destroyed half the Turkish force in a counterattack. In December the Anzac Mounteds took a Turkish position by storm in one day at Magdhaba. The same force repeated this exploit on January 9, 1917, at Rafa. In each case a stout resistance was overcome only at the last moment and by a general charge. In March it outflanked the Turks at Gaza and entered the town capturing a divisional commander, only to be ordered to retire because south of Gaza the main force of attacking infantry was held up. Then the Turks built a so-called impregnable 20-mile front from Gaza to Beersheba with a defending force of 200,000. General Allenby, Commander-in-Chief of the British forces prepared the attack. In an all-day storm of the Beersheba Defenses General Chauvel's Light Horse Brigades, which had spent three days to detour through the desert, launched a charge over two miles of terrain through machine-gun and shrapnel fire against unreconnoitered trenches. They galloped straight at a double line of trenches, took them in their stride, dismounted and fought the defending infantry with bayonet. Turkish infantry, gunners and transport men were put to flight. The XX and XXI Army Corps pressed home the attack on the position. Anzac mounteds assisted by the air corps completed the rout. In six days the Turks abandoned the center of their defense line and evacuated also Gaza. Every important place up to Jerusalem fell rapidly to the new mobile attack. In five weeks the Anzac Mounted Division reached the Jordan. German forces attacked along the Jordan in July with temporary success. But in three months Allenby's infantry broke through the Turkish lines on the coast with a massed attack, and in a famous desert ride Chauvel's Anzac Mounted Division, then 12,000 strong, brought up with the enemy's rear. The combination of the striking force of the Mounted Division and the shrewd disposition of the forces by General Allenby completed the shattering defeat of the Turks in October, 1918.

"—let 'em come! !"

Horse Sense and Horse Power

*By Lieutenant Colonel F. W. Koester, Q.M.C.**

IN good old American parlance, this war is a free for all. Anybody can get in and almost everybody has. Already warfare has been carried to and over every continent and to, over and under every ocean but the Antarctic. In such a war, anything may be used and before it is over probably everything will be. So far as America is concerned, our success requires the fullest utilization of every resource and that includes the horse. How the latter will be used, by whom, and where is no concern of this article. It seeks merely to point out some lessons based on recent experience and some capabilities of the future.

It requires no great acumen to recognize and accept certain fundamental developments of the present war. This conflict more than any other is a battle of machine—land, sea, and air machines—and will continue to be. In such a battle, America is most fortunate to have the world's greatest resources, both in materials and means of manufacture, for providing the war machine requirements of our allies and ourselves. To coöperate with these machines, to insure and exploit their fullest success, to supplement them when they need it, to operate where they cannot, and to substitute for them where and when they are not available, has become, currently at least, the obligation of other elements of our armed forces.

There are other developments too. Thus far, only those nations whose armies have been properly balanced have enjoyed any large scale success. Conversely, those armies whose capabilities have been narrowed, through lack of balance in their material means, have been very limited in their success. No nation or combination of nations has had all of everything it needed. In meeting land transportation requirements, all armies successful to date have established and maintained a balance between motors and animals; they have found ample need for both. Furthermore, all armies victorious to date have utilized somewhere, sometime, large numbers of mounted men either as cavalry or to perform cavalry functions. Some factual information may be in order here. In Poland, Germany used more than 200,000 horses and when she overcame France, she had almost 900,000 horses in her armed forces. Practically all German artillery is horse drawn; each of her 245 or so divisions has horse-drawn transport and each foot regiment a platoon of cavalry. Figures are not available concerning her use of horses in Russia but it is known her mounted and horse-drawn units have been widely used. Again, it is known that Germany advertised for and probably purchased all available horses in France for use in Russia. The Russians, though great exponents of air power and mechanization, have always used large numbers of horses and horse units. It is not proper to give actual figures but it can be said that Russia uses more horses than Germany. Throughout the German drive into Russia, the hard-riding Cossacks were frequently in the limelight—and they still are. They were conspicuous in the fighting on the southern front which apparently marked the turning point of the entire campaign and, as this is being written, early in March, they are being featured almost daily in news accounts from that front. Japan has used horses on a large scale in China and only a few years ago, in anticipation of current and future horse needs, inaugurated a very large scale remount program. In the invasion of Luzon, official as well as news accounts told of Japanese use of horse cavalry in the very rugged country around Baugio. Other examples might be cited.

The following paragraphs are quoted from an article prepared by this writer about ten days after the United States entered the war:

"What part the horse may play in future campaigns is, of course, a matter of conjecture; however, there are some things which appear reasonably certain. All armies are likely to continue to use horses they now have and

Russian Cossacks drive on in the direction of Smolensk.

*In charge of the Western Remount Area, San Mateo, California.

Russian Cossacks in dismounted action on the Smolensk front.

will probably require replacements. In some new theaters of war being or likely to be opened, horses will probably be needed. Past experience indicates that, if and when practicable, present and probable future allies can and may use horses in large numbers. Again, any shortage of metals, fuel oils, lubricants, or other essentials of motorization or mechanization will obviously enhance the value of and need for horses both by our allies and us. Local security groups such as State or Home Guards, Sheriff's Posses, and the like are being formed in many parts of the country. Because of danger of fifth-column activities, the threat of parachutists, and for other reasons such groups appear very important. Furthermore, it is very desirable that many of them be highly mobile and capable of operating over any kind of terrain, day or night in any kind of weather which in many instances, at least, means that they must be mounted."

"It appears, too, that changes wrought by the war will add greatly to the need for horses in our domestic life; for example, curtailment of the manufacture of tractors, trucks, passenger vehicles and numerous power-driven implements, restrictions on the use of certain vehicles or in the consumption of certain fuels, or other commodities, or inability to import certain essentials—these and many similar conditions present or imminent cannot but increase the current importance of the horse. Again, America is not only the 'Arsenal of Democracy' but it very probably is also the bread basket. There can be no doubt that greater and greater demands will be made on our agriculture, cattle industry, and other industries related to food production. Obviously then, our transportation system to some extent and our agricultural and cattle industries to a great extent seem destined during the war to lean more and more on the horse."

The United States has been in the war three months since the quoted paragraphs were written. Nothing has arisen which materially changes the accuracy or soundness of the views expressed in these paragraphs. In the face of prospective animal requirements, it may be of interest to examine our animal resources and our means of mustering them for our military or domestic use or both. To begin with, it is no military secret that the United States today has the largest pool of well-bred military and general purpose horses to be found in any country in the world. The same is true of our mule resources. These animal resources are actual rather than potential and they are in such condition as to permit their immediate use. In short, we don't have to produce our animals, we already have them. A still further advantage is the fact that these tremendous resources are not only developed but they are currently distributed both in numbers and type, where they are most needed for our domestic use and can be most quickly assembled for military use. Our tremendous horse industry receives no subsidy from and involves no direct cost to our government. Nationally, it is a by-product. It requires little, if any, special personnel and few exclusive facilities.

To accomplish prompt and efficient assembly of our animal resources to meet any conceivable requirements, The Remount Service, a division of the Quartermaster Corps, is prepared and equipped to act. Through its seven territorial divisions known as Remount Areas, it can initiate a procurement program promptly and effectively in any part of the United States or over its entire area. By virtue of America having the finest and most extensive rail system in the world together with an equally effective network of highways, our animal resources can be assembled where and when needed within our own borders. Through its three permanent depots, the Remount Service can intelligently and efficiently issue animals as required. To maintain an even rate of production and to guard against future shortages, the Remount Service maintains and operates concurrently with its procurement operations a very efficient and widespread breeding system which involves the use of some 750 stallions.

What has this meant to our Army? First there can be little doubt that our horse cavalry is today better mounted than any similar arm in any army in the world. The same is probably true of our horse and horse-drawn artillery and of our pack units. Our American mule has no equal. Because procurement standards have been raised and processing methods greatly improved, remounts now reach using agencies very nearly, if not actually, ready for use.

Editorial Comment

MAJOR GENERAL JOHN K. HERR, Chief of United States Cavalry, retired from active duty on February 28, 1942. It was upon his own application, after the completion of more than forty-three years of continuous faithful, loyal and meritorious service. During his tour as Chief of Cavalry, which began in March, 1938, General Herr made the most of every opportunity to improve and modernize the Cavalry Arm, and there were recorded many noteworthy achievements:

General Herr was the first to sponsor the ¼-ton truck, generally referred to as the Bantam or Jeep. In this he was ably supported by General Lynch, then Chief of Infantry.

General Herr was among the first to strongly advocate large areas for training, specifically in the vicinity of Fort Bliss, Texas.

Being a natural fighter and having the full strength and courage of his convictions, General Herr relentlessly maintained, throughout his service, that horse cavalry was essential to a well balanced army. Had it not been for his strong policy in this regard during those years when the British mechanized much of their cavalry and when commercial motor propaganda was at its height, our horse cavalry doubtless would have suffered dire consequences. As a result of his unrelenting and uncompromising attitude relative to the retention of horse cavalry, the 1st Cavalry Divisional organization was perfected, and the 2d Cavalry Division came into being with its complete organization and equipment, authorized.

General Herr's frankly out-spoken fight for horse cavalry aroused in some quarters the feeling that he was opposed to mechanization. Nothing could have been farther from the truth. General Herr fully appreciated the possibilities and capabilities of mechanization and freely exploited its use by cavalry—*but not at the expense of horse cavalry units already existent.* His attitude was particularly exemplified by his strong advocacy of the Corps Reconnaissance horse-mechanized regimental organization; but at no time was he willing to completely *replace* and reorganize our horse cavalry as totally mechanized units such as was done with the 1st and 13th Cavalry Regiments.

The mechanized reconnaissance squadrons, as set up by the Chief of Cavalry, proved unquestionably to be sound and of extreme value in accomplishing cavalry missions.

The introduction by the Chief of Cavalry of the 81-mm. mortar into horse units was another important progressive step in modernization.

The horse-portée trailer was developed under the direct supervision of General Herr and greatly added to the strategic value of cavalry.

General Herr

Authorization for the treatment of horse shoes to prolong shoe-life on hard surfaced roads and the necessary war priority authorization was another among many achievements.

Biographical data relative to General Herr, are as follows:

He was born at White House Station, New Jersey, on October 1, 1878. He was graduated from the United States Military Academy in 1902, and commissioned a second lieutenant of Cavalry.

General Herr's early service included a tour in the Philippines, service as an Instructor at the United States Military Academy and duty in the Hawaiian Islands.

During the World War he served as Chief of Staff of the 30th Division in France and participated in the Somme Defensive, Ypres-Lys Offensive and the Somme Offensive.

General Herr was awarded the Distinguished Service Medal, together with the Belgian Order of Leopold, for extraordinary service as Chief of Staff of the 30th Division, American Expeditionary Forces, in the capture of Voormezelle and Lock Eight in the Ypres Section in Belgium in September, 1918, and in the breaking of the Hindenburg line at Bellicourt, France, and in operations against the Selle River and the Sambre Canal, September 29-October 20, 1918.

From November, 1920, until August, 1922, General Herr served with the American forces in Germany, at Coblenz, during which time he was Assistant Chief of Staff for Supplies and later Assistant Chief of Staff for Operations. Upon his return to the United States he served in the Military Intelligence Division, War Department General Staff, until July 1, 1924.

General Herr is a graduate of the Army War College, The Command and General Staff School, The Mounted Service School and The Cavalry School.

He was a member of the faculty, Army War College, from 1928 to 1932.

He commanded the 7th Cavalry at Fort Bliss, Texas, from September, 1935, to March, 1938, when he was appointed Chief of Cavalry.

General Herr is an ardent horseman and can be seen riding frequently in the parks and trails of Washington and Virginia on his thoroughbred charger, *Star Witness*. He was one of the Army's most noted polo players, being a member of the Army Team which defeated the British Army Team at Meadowbrook in 1923.

General Herr's retirement has been a great loss to our cavalry arm—and none can appreciate this fact better than those of us who served under his command in the Office of the Chief of Cavalry.

* * *

Mobile Force

Highly mobile ground troops—such as cavalry, reconnaissance elements, the armored force, antimechanized elements and motorized infantry—are cohesively being drawn together simply because of the strategical missions which they perform in common. They speak and understand the same language irrespective of their respective modes of travel and tactical methods.

The Germans appreciating this pertinent fact already have grouped such units under the heading of *(Schnell Truppen)* Mobile Troops. That they have functioned efficiently under such grouping is beyond question.

Mobile warfare demands decentralization in the execution of mobile missions. Decentralization in combat requires the use of well-balanced combat teams. The character of terrain and the tactical situation usually indicate the necessity for *motors plus animals* in order that objectives can be reached regardless of the incidents of terrain, climate and weather.

Balanced combat teams capable of handling diversified combat situations are the result of long-range planning and training. They cannot effectively be created after the battlefield is reached.

* * *

Firearms Registration?

There is no law requiring the registration of privately owned firearms for civilian defense!

Yet, many well-intentioned members of local defense councils have tried illegally to frighten people into gun registration, under the guise of "civilian defense."

The only practical use for such "defense" registration lists will be to make available to Fifth Column Groups information as to where *they* can acquire additional arms and what homes they should descend on first when outbreaks of local violence are called for by the enemy plan.

In Belgium and northern France the German military commander gave the population until January 20th to surrender their firearms. After that date it was assumed that anyone found in possession of arms would be executed.

The Nazi invaders similarly set a deadline recently in Czecho-Slovakia, in Poland, in Norway, in Roumania, in Yugoslavia and in Greece.

The Japs, under Lt. Gen. Tomoyuki Yamashita, in the Philippines, more recently followed suit:

Why? Because the privately-owned firearms of the few citizens who "neglected" to register their guns have been a constant worry and danger to the Hun and his Quislings, and the Jap.

Surely, no defense official is so *naïve* as to believe that in an emergency, with lives at stake, a gun can be issued to *any* civilian defense worker who happens along—even Fifth Columnists who might "have happened" to enroll.

Better think through this matter of Firearms Registration!

* * *

Yet, They Can't Shoot?

Clark Lee, Associated Press staff writer, with General MacArthur's army on Bataan Peninsula, in describing a recent visit with General Pierce, well known to cavalrymen, wrote a characteristic description as follows:

". . . I ride a few miles farther with a busload of Filipino soldiers heading for the front and then walk into the tent field-headquarters of Brig. Gen. Clinton Pierce in a partially-cleared grove. Pierce, from Brooklyn and one of the fightingest men in the United States Army, recognizes me through the coat of dust which sweat has turned to mud and recalls our last meeting, on December 29th, when the command he then headed, *the Twenty-sixth Cavalry, was covering the right flank of the United States forces moving toward Bataan Peninsula*. . . . Pierce was promoted, many of his officers were decorated and *the whole regiment was cited for the rear-guard*

fight against the Japanese all the way from Damortis to Bataan. . . .

"Gen. Pierce has one foot in his familiar riding boot, the other minus a toe, in a bedroom slipper. A sniper got his toe two days ago. . . .

" 'These weren't kids they sent against us at Damortis, Pozorrubio, Binalonan and Tayug,' he says. 'They were seasoned troops about 21 to 24 years old. Now they have suicide missions attempting to land on our flanks so they pick their best men and toughest fighters. But I still say they are rotten rifle shots. That sniper took three cracks at me across the road here but couldn't hit anything but my toe. . . .' "

—Also see Life *Magazine, March 2d, article by Captain Wheeler describing action of 26th Cavalry.*

* * *

Training

The paramount consideration of our army today is thorough training. For all units, combat is imminent if not already actual. We are at war! There is no time now to lose!

Training and field duty are closely related to organization, discipline and morale. A sound organization, a disciplined body of troops, a mass with high *esprit*, make training quick and effective. Moreover, training makes organization cohesive, discipline better and morale higher.

The great development of mechanical means and the increase in complexity of tactics have widely enlarged the importance of basic and fundamental training. There is so much practical business to know and so little time in which to learn it, that unit commanders are confronted with huge tasks in carrying out the programs and schedules which are intended to cover the elements of the training regulations. To give the prescribed training in an interesting and lively way an officer must exercise the maximum amount of thought and ingenuity. Enthusiasm begets enthusiasm. Even though his unit may be detailed to guarding a critical area or establishment he must by rotation of units find a way to keep his command trained, interested, and alert —ready for immediate combat.

There seem to be three classes of officers as far as training is concerned. They are the *strong*, the *weak*, and the *bashful*. The strong officer lets *nothing* stand in his way of gaining the objective desired by regulations and by his commanding officer. After-hour work is immaterial to him so long as he sees that he is approaching the desired goal fast enough and thoroughly enough. He is not afraid to speak out and correct errors whenever he sees them. The weak, are complacent and listless in their control. They see errors but do not correct them. The bashful, lack confidence and are fearful of correcting errors. They avoid seeing them. It is good for timid and weak officers to be placed in the same unit or near strong officers. If then there is no immediate improvement weak and timid officers should be assigned to administrative duties to release strong officers for combat training.

Time for training, obviously, is at a premium!

* * *

A Moral

These two illustrations of methods of discipline are presented without comment:

"1) It was one general officer's habit to correct in person every recruit he saw with his coat unbuttoned. He once ran the length of a block to overtake a soldier and reprove him publicly because one button of his blouse had the head of the eagle pointing downward. The admonition was administered before a crowd of grinning civilians.

"2) Just before the second day's fight in the Wilderness, General Lee rode along the front of the Texas Brigade, drawn up for his inspection. Opposite the center of the brigade he turned his horse and silently faced his men. Knowing that many of them were going to their death, tears filled his eyes. He gazed at them in silence a few moments, raised his hat and silently rode away. Then a tall, raw-boned Texas private stepped from the front rank and facing the battalion said with emotion, 'If any .... of a .... here don't fight today, after what the General has just said to us, I will shoot him in his tracks!' "

* * *

What Next?

It is anybody's guess! One fact, however, is definitely clear—that those of us who "wear the cloth" are less concerned now about *post-war* considerations and entertainment than we are about getting equipment, weapons and training for immediate combat to win *this* war.

The soldier has little to do with the ramifications which produce war. It is his job preëminently to prosecute war. Everyone does or should understand this. We have no time now for casting aspersions. We are at war and *in it up to our necks*. It obviously is to our advantage to pull together and stick together. *Unity produces strength.*

Every consideration, therefore, that does not directly and specifically further our war effort is now worse than a waste of time.

We must not be side-tracked from our purpose!

* * *

Colors on Army Headgear

Most of the colors of the rainbow are utilized to distinguish the various arms, services and bureaus of the United States Army. The colors as prescribed for enlisted men for the service hat require the first named color to be used for the cord and the second named color to be used for the acorns and keeper. A gold cord is

Emblem of Honor

The Emblem of Honor Association has asked us to help them contact Service papers in locating *mothers with four or more sons* in the Armed Forces.

The Association is a non-profit organization which arranges public presentation of the *Emblem of Honor* to these mothers with a view not only to honoring the families and increasing their pride in the boys service, but also to build public morale and encourage voluntary enlistments.

All information with reference to these families should be sent to the Association at 60 East 42d Street, New York, N. Y.

used by general officers; gold and black intermixed are worn by other officers; silver and black is the prescribed combination for warrant officers.

Color combinations also are used in the cord edge braid which is placed on the caps of enlisted men.

The official colors used are:

Adjutant General's Department—Dark blue, piped with scarlet.

Air Corps—Ultramarine blue, piped with golden orange.

Armored Force—Green, piped with white.

Cavalry—Yellow.

Chaplains—Black.

Chemical Warfare Service—Cobalt blue, piped with golden yellow.

Coast Artillery Corps—Scarlet.

Corps of Engineers—Scarlet, piped with white.

Field Artillery—Scarlet.

Finance Department—Silver gray, piped with golden yellow.

Infantry—Light blue.

Judge Advocate General's Department—Dark blue, piped with white.

Inspector General's Department—Dark blue, piped with light blue.

Medical Department—Maroon, piped with white.

Military Intelligence Reserve—Golden yellow, piped with purple.

Ordnance Department—Crimson, piped with yellow.

Permanent Professors of the United States Military Academy—Scarlet, piped with silver gray.

Quartermaster Corps—Buff.

Signal Corps—Orange, piped with white.

Specialist Reserve—Brown, piped with yellow.

* * *

A Challenge

During the past calendar year The CAVALRY JOURNAL repeatedly challenged cavalrymen, particularly our splendid cavalry bands, to produce a popular cavalry song; but as yet our challenge goes unheeded.

Our cavalry bands rank high among other army bands and unquestionably they could produce an appropriate cavalry song if they'd only "put their minds to it."

What's ailing, Band Leaders? Cavalrymen expect you to accept the challenge; so let's get at it. "Garry Owen" means a lot to the 7th Cavalry, but we want a song that will be dear to the heart of *all cavalrymen!*

* * *

Service Journals

Prior to the recent War Department reorganization, the Cavalry, Coast Artillery, Field Artillery and Infantry Journals operated under the supervision of their respective Chiefs of Branches.

Under the new set-up the editors of these service journals have been assigned to the Requirements Section, Headquarters Army Ground Forces. The journals, however, will continue publication as formerly and will be "cleared" by the War Department Manuscript Board.

Addresses of Editorial Offices in Washington are as follows:

The Cavalry Journal, 1719 K Street, N. W.

The Coast Artillery Journal, 1115 17th Street, N.W.

The Field Artillery Journal, 1218 Connecticut Ave.

The Infantry Journal, 1115 17th Street, N.W.

APO?

Keep us posted as to your change of address!

Regardless of where this war may take you, if you will send us your APO when you embark for foreign soil, The CAVALRY JOURNAL will reach you wherever the United States mail is carried.

Editor's Mail

Editor, The CAVALRY JOURNAL:

We have noted with pleasure that the first number of The CAVALRY JOURNAL, 1942, bears below its title *Volume LI No. 1.*

The CAVALRY JOURNAL has for years been a much appreciated volume on our shelves, we have it almost complete from the first number. The current numbers are looked forward to with great interest.

May we extend to you our congratulations and best wishes upon the completion of 50 volumes, an event which we feel should not be allowed to pass without comment.

Yours faithfully,

JABEZ H. ELLIOTT, LT. COL.,
Honorary Librarian.

Canadian Military Institute,
Toronto, Canada.

* * *

Editor, The CAVALRY JOURNAL:

Your CAVALRY JOURNAL of January-February date carried the finest, simplest, most graphic and convincing presentation of the true case of the horse that I have ever seen. The articles would be a good initial basis for some needed national education and enlightenment.

The fact that the pointful and timely message contained in the masterful and comprehensive address of General Herr doesn't have national distribution is little short of tragedy. The photography and selection of pictures were superb . . . effectively illustrating that "modern" and "victorious armies" still find the horse an essential ally in their operations.

General Hawins' Notes were very pertinent at this time. In fact the entire content of this issue was very stimulating, and as has been characteristic with your publication, all of the articles contained information of lasting value and interest.

The pictures depicting the retarding effects that boggy roads have on mechanized units was particularly interesting to me. Only last week I completed a cross-country drive, from Oregon to Georgia, much of the area traversed was either covered with snow or boggy from thaw and rain. Mechanized units would be very inefficient anywhere in this wide area except on the paved road nets, even the side streets in the country towns of the Nebraska section I passed through would be impassable to any motor propelled vehicle. My opinion on this is substantiated by the fact that residents use only horse-drawn vehicles and sledges for short distance travel and farm operations.

Manufacturers of automobiles, trucks and tractors, with the coöperation of radio, newspapers and screen have given the American people a very false picture of the capabilities of motor propelled vehicles in cross-country war-condition operations, and the limitations of the horse. Junior officers seem particularly susceptible to this propaganda, getting a romanticized and unrealistic point of view. The picture is further distorted by the wily use of comparisons between the motor and the horse, using illustrations that are entirely outside of the horses normal field. It is never mentioned that in actual combat operations, mechanized units need a "tailor made theater"; that weather, climate, ground conditions, road net surfaces, and supply and maintenance, are serious continuing problems. All battles will not be fought on firm ground and paved highways.

Aside from actual combat there is a great field for animal-drawn transport . . . animals could satisfactorily be used in lieu of motors for short distance and interior work, thereby releasing motor vehicles for long distance hauling, combat to which they are adapted, not to mention the conservation of fuel, maintenance and rubber.

Signed: CECIL L. EDWARDS,
Captain, (Inf) QMC

Supply Battalion
2d Armored Division,
Ft. Benning, Georgia,
5 February, 1942.

* * *

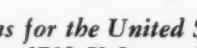
Editor, The CAVALRY JOURNAL:

Just received my January-February issue of The CAVALRY JOURNAL and have gone though it hurriedly. I want to extend to you and the The JOURNAL my heartiest congratulations on this issue, which I believe will do more good for the horse cavalry and the horse in war than any single piece of printed matter I have ever seen published. The only regret I have is that every person in the United States can't be forced to read it, and I might add that a lot of people in uniform could profit from its study if they only would.

Signed: F. W. KOESTER,
Lt. Colonel, QMC.,

San Mateo, California.

Please give the inclosed subscription card to a non-subscriber and use Change of (APO) Address Cards.
DEADLINE DATE NEXT ISSUE, MAY 5th



Address all communications for the United States Cavalry Association and The Cavalry Journal to 1719 K Street, N.W., Washington, D. C.

Camouflage vs. Mission Failure

By Lieutenant David H. Houck, 84th Engineer Battalion
and Lieutenant Jay W. Doverspike, The Engineer Board

DEATH to the individual, failure of the mission, and jeopardy to the troop, the regiment, the division or even to the army corps can result from lack of, or faulty, camouflage. The analogy to Ben Franklin's "For want of a horse shoe nail . . ." is particularly applicable in cavalry reconnaissance units. For want of a little camouflage a scout was lost. For want of a scout a troop was captured. For want of a troop a flank was open. For want of a flank a corps was surprised and annihilated. All for the want of a little knowledge and training in camouflage.

Sounds far fetched does it? Well it happened in Poland. It happened in France, it happened in Greece, in Libya, in Russia and by the time this gets into print it will be happening again on any one of the world's half a dozen battle fronts.

Obviously, the loss of one man will rarely have serious results, but if enough "one man's" are lost it is a different story. The point is, that unless the individual soldier is so thoroughly grounded in camouflage discipline that it becomes second nature to him, he may never survive to accomplish his mission.

The same holds true of the unit, whether it be platoon, troop, squadron, or regiment. But again it returns to the individual, for the carelessness of a single man can give away the position of any of these. The value of undiscovered reconnaissance cannot be over emphasized to a cavalryman. Time after time, in the Carolina maneuvers we were told blandly, "Oh the men don't bother with camouflage now, but just wait until they hear a few shells. Then they'll camouflage."

It reminded me of the man who was asked if he could play the violin; "Well, I've never tried, but I suppose I could if I had to," he replied. Camouflage isn't as hard to learn as playing a violin—but neither can it be put on like a coat. It's an art which puts an added premium on perfection—for anything short of perfection is death—and perfection cannot be attained without practice, even in so simple an art as camouflage. As mentioned before, it must be practiced over and over until it becomes second nature for every man to pay careful attention to every one of the dozens of details which might give him away. You wouldn't send a man to face the enemy who couldn't protect himself from gas. How much more often he will be required to protect himself from enemy observation.

If recent maneuvers proved anything about camouflage, they proved that camouflage cannot be taught effectively in the field alone. Camouflage *must* be taught and taught thoroughly in garrison. It must be practiced in garrison. It must become second nature in garrison so that it is applied almost unconsciously under the stress of combat.

Too frequently it is assumed that men know or have acquired a knowledge of camouflage measures through general tactical experience. Most have never undergone a thorough and extensive course in the subject. Every man should have this training, if he has had it before, he should be given it again, for it is only through repetition and practice that such material can be absorbed and retained.

Camouflage is a difficult subject to teach. It is difficult to make men enthusiastic about a subject where the desired result is negative. If he is successful in hiding himself or his equipment, nothing will happen and he probably won't even know whether his position has been under observation. Even under combat conditions, the results of faulty camouflage are frequently so indirect that the soldier may never realize that bad camouflage accomplished half an hour before was what brought on an artillery concentration, an enemy flanking movement, or an aerial attack. And the discouraging thing is that usually the men who have learned the lesson the hard way are too dead to apply it.

Definite attention must be given to the responsibility for instruction, enforcement and execution of camouflage and camouflage discipline. In accordance with FM 30-25, Counterintelligence, Sec. I, Par. 2, "*Responsibility*. The commander is responsible for all counterintelligence measures within his command." The responsibility must necessarily include, secrecy

Figure on left clearly distinguishable; figure on right, if in prone position, would be difficult to locate.

Sniper suit on figure at right fades into landscape.

discipline and concealment. This does not, however, preclude consultation with, and advice of experienced camouflage officers where possible. If further clarification is needed, Training Circular No. 60, War Department, October 2, 1941, states, "III *Field Camouflage*. Experience in recent maneuvers has indicated that there is misunderstanding of the responsibilities for, and measures for achieving, proper protective concealment and camouflage of equipment, matériel, and personnel. With view to clarification the following is published for the information and guidance of all concerned:

According to the present camouflage doctrine:

a. The Commander of any unit is responsible for the camouflage measures and camouflage training within his command.

b. Every officer and enlisted man must be trained in the need for and means of taking advantage of natural cover, and the use of camouflage materials."

It is believed that adherence to the following suggestions would assist in emphasizing the responsibility for training and execution of camouflage or protective concealment.

a. That War Department Training Circular No. 60 be placed on the required reading list for commanders of all units up to and including the highest echelon of command.

b. That each troop commander appoint a junior officer or non-commissioned officer who, in addition to his other duties, will be responsible to the commander for the observance of camouflage methods and discipline at all times, and will endeavor to instill in the minds of the personnel of the troop that their lives and the accomplishment of their missions depend upon the strict observance of the rules of camouflage by every man. Show them that it's only common sense on their part for the group to watch for offenders and require them to obey the rules of camouflage.

c. That every driver be impressed with his responsibility for the concealment and security of his own particular vehicle.

d. That each man be observant and helpfully critical of the negligence of other members of the command. A number of small mistakes make a large one and a possible catastrophe.

Camouflage or protective concealment as applied to cavalry is simplified to a great extent by the fact that the reconnaissance elements are first on the ground and are scattered over a wide front. With the exception of the horse trailers, cavalry camouflage is entirely a matter of knowledge and discipline. Which brings up the misused and misinterpreted term "camouflage discipline." Many people seem to think of it in terms of TBA equipment to be drawn from the Quartermaster or Ordnance. Others visualize it as an inherent quality of every soldier which can be turned on like a water faucet. Camouflage discipline is merely the will to camouflage. It is utterly useless without the knowledge of what to do. The two are inseparable—knowledge and discipline. One will do no good without the other. For this reason, they will be treated together.

The technique and theory of camouflage are rather fully covered in the Engineer Field Manual 5-20, and in numerous articles in such publications as "The Military Engineer," "The CAVALRY JOURNAL," etc. For the purposes of this discussion it will suffice to repeat the four fundamentals of camouflage: (1) Form, (2) Shadow, (3) Texture, (4) Color.

(1) *Form*. A truck or a trailer is distinguishable by its shape. Man makes objects in straight lines. Nature never makes straight or regular outlines. Unless the regular shape of large man-made objects is broken up by camouflage, the straight edges will stand out in marked contrast to nature's irregular background.

(2) *Shadow*. Man-made objects cast characteristic shadows. From the air, and in aerial photographs, the shadows are frequently seen before the objects themselves. To camouflage, the shadow must either be hidden or broken up.

(3) *Texture*. Flat smooth surfaces must be avoided as they reflect more light than rough and irregular surfaces, even though the color matches perfectly. It there-

Good comparison of merits of camouflage suits for use by scouts and small units.

Japanese make good use of camouflage. Photo shows a truck and soldiers disguised by a covering of nets and straw.

fore follows that in camouflage, textures must be matched as nearly as possible.

(4) *Color*. While color should be matched approximately, it is the least important of these four factors. Every color is found in nature, and at a distance, all tend to lose their identity.

So much for theory. Now to apply these principles to Cavalry in the field. One of the biggest problems is the scout car; the same methods can be used for trucks and command cars.

There are three methods of achieving results in protective concealment, any one of which has its place in camouflage study or training, namely:

(1) *Hiding* which indicates the complete concealment of an object.

(2) *Blending* or making an object indistinguishable from its surroundings by breaking up its form and shadow, and toning color.

(3) *Deceiving* or causing an object to appear to be something else, and by the utilization of dummies, both of which are confusing to direct or indirect observation.

Here are some hints which will prove helpful:

1. First of all, drivers of all vehicles must be impressed with their responsibilities and properly trained in order that they may know what action to take under any or all conditions. It does not stop with the concealing of the vehicles on various *practice* occasions, as most of them assume. Drivers must be trained to conceal their vehicle *every time they stop*, even if for only a few minutes. This means *every* time—and immediately. It only requires one time to get killed. Command car drivers are particularly negligent in this respect. They seem to think that driving an officer makes them invisible. As a matter of fact, command cars with their light tops are harder to hide than almost any other military vehicle. An OD compound has been developed for canvas, and by the time this article has been published will probably be available through division, corps, and army quartermaster depots.

2. Do not drive across an open field to get into the woods. If you have to cross open land, go around the edge of the field. A simple track across an open field stands out like a neon sign from the air. It will invite closer observation and probably attract a small bomb or so.

3. In moving into a bivouac or assembly area, stay on existing tracks. Don't broaden a road, unless necessary to avoid making a new road. It is obvious from the air, is a sure sign of activity, and is an indication of traffic volume.

4. Get under a tree on the shady side and move around with the shade. It may be a lot of trouble, but it's easier than dodging machine gun bullets.

5. Be careful not to park too close to the edge of a woods. You'll be visible from ground and oblique aerial observation.

6. Park at least 50 yards away from the nearest vehicle. This is very important in the event of detection of an individual vehicle.

7. Carry pieces of burlap to cover windshields and headlights. Turn rear view mirrors down. When observed from the air, various bivouacs have looked like Christmas trees because this precaution was neglected.

8. Cut brush and put it around and over your vehicle to throw shadows on it and to break up its outline. Avoid making it look like a brush heap, and don't cut the brush nearer than 100 yards from the nearest ve-

hicle. Always place plant material right side up, as the under side generally has a different shade of coloration than the upper side.

9. Replace brush or branches when they begin to wither. Dead brush in summer is worse than none at all.

10. Remember that camouflage is not one of those details where you can sit back on the assumption that, "If everyone else does it I won't have to." In camouflage, *everybody's* job has to be done completely and well, or else.

11. Disturb as little as possible the appearance of existing natural conditions. The enemy may have previously taken photographs of the area.

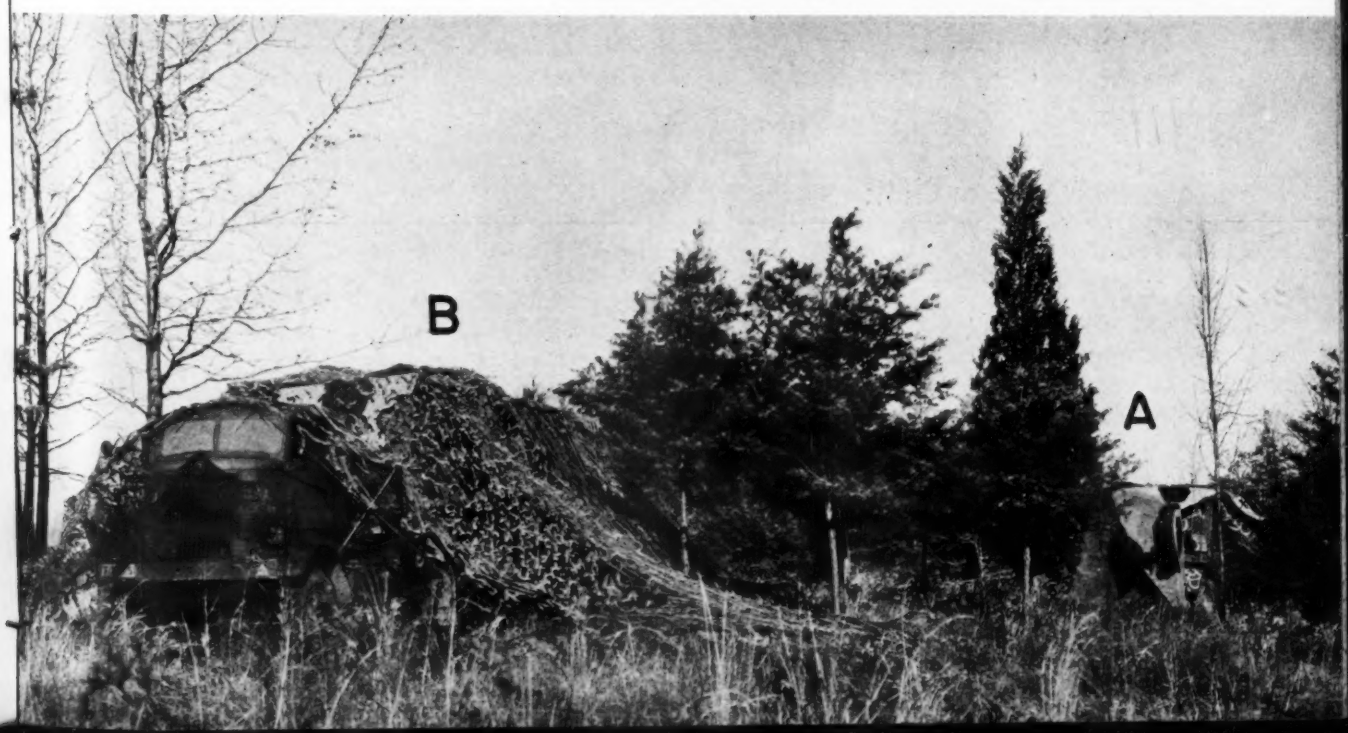
12. Remember that, although you are first on the ground and may leave it before you are detected, other units will come in behind you and want to use that same spot for concealment. Don't disturb the ground any more than is absolutely necessary, either in entering or leaving.

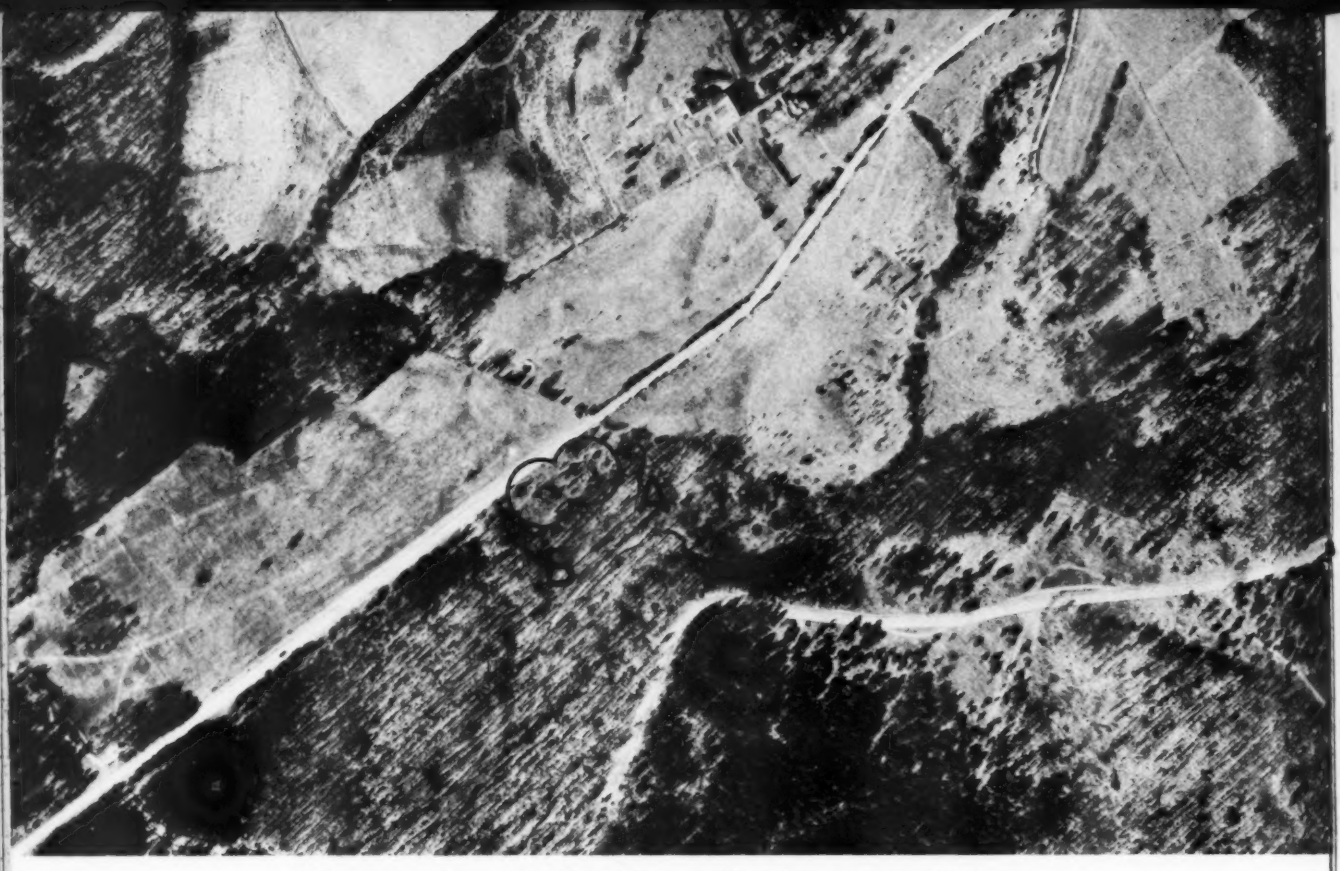
Tests of the use of nets and drapes for vehicular concealment have been carried out and found to be beneficial if skilfully executed. In flat, open country, use of the flat top net is probably most effective because of the possibilities for diffusive blending and obliteration of form. The large quantity of material and extensive labor required are, however, a major handicap to its use. The drape while not so effective unless utilized in conjunction with screening plant material, has the advantages of speed of erection, smaller quantities of material required, and requires less transportation space. The drape if simply thrown over the vehicle does not screen one of the major targets of observation, namely, the form of the object. Poles or other contrivances are therefore necessary to break up the form of the vehicle under the drape. In flat, open country where drapes and nets are used, it is also essential that particular care be taken in blending the color tone and texture of both flat tops and drapes, in with that of the surrounding landscape.

Cavalry units in bivouac or in assembly areas have much the same problem as other arms, in that a large amount of space is required. Otherwise it's the same as Artillery, Motorized Infantry, or any other mobile branch. The methods described above hold for all vehicles. Men, of course, disperse as much as possible and take advantage of natural cover. If shelter tents are pitched, they are located under cover and are usually taken down in day time. If not, they are concealed with natural materials. Special care must be taken with kitchens and kitchen utensils. Smoke in the daytime and firelight at night will draw attention more quickly and from a greater distance than any other single factor. In a flight over supposedly concealed bivouacs during the Carolina maneuvers, positions as far as five or six miles away were picked out from smoke alone. Paths into the area, to the latrine, and to the kitchen should be marked to follow a covered route. At night no lights should be allowed. Smoking should be prohibited.

Camouflage of individuals is pretty thoroughly covered by basic training in scouting and patrolling, and at the risk of making an "assumption of knowledge" warned against earlier, it is assumed that every cavalryman will be thoroughly familiar with all phases of this art. Lately, however, camouflage suits or sniper suits have been developed and tested by the Engineer Board, and have proved very effective in concealing individuals

(A) Trailer covered with painted drape. (B) Trailer covered with garnished drape.
—see aerial view on next page.





Aerial view of two camouflaged horse trailers shown in ground view.

in patrols, outposts, etc. They look more like the pajamas of a sloppy artist than anything else, but blend remarkably well with natural colors. In any attempt at individual camouflage there is one precaution that must be taken while under observation either from the air or ground. Movement must cease entirely. As long as a man is motionless, he stands a good chance of escaping detection. The moment he moves, however, all the camouflage devised by man would be insufficient to hide him. Another rule is to keep the face down. Particularly true when under aerial observation. Keep in the shadows. If you do, your own shadow will be absorbed, and as long as no light reaches you, none can be reflected to the eyes of the enemy, or to his camera.

Experimental work on Cavalry problems has been conducted in several localities. Refer to articles in The Cavalry Journal, Volume No. 5, Sept. and Oct., 1938, and the Military Engineer, Volume XXXI, No. 176, Mar. and April, 1939, and No. 179, Sept. and Oct., 1939.

Now under way at the Engineer Board, Fort Belvoir, Virginia, are experiments on cavalry's most serious problem, the concealment of its horse portée trailers. Regardless of what comes out of the experiments, these huge vans will always require a tremendous area of the best natural cover. Neither the Engineer Board, nor our enemies have yet invented an invisible paint, so don't expect any such miracles as when a certain outfit on maneuvers in Louisiana last summer sent a pyramidal tent to our base camp with the following note: "Please camouflage this tent, we'll be back for it tonight."

The personnel of any command post, regimental, squadron, troop or any other, has a two-fold camouflage responsibility. Not only is it responsible for its protection to save its own skin, but as the nerve center of the unit, the security of every man in the unit is dependent upon its continued and efficient operation. For this reason, the actual command post should be located well away from any concentration of vehicles, and visiting vehicles must not be allowed to park in the vicinity. Activity around the area of command should be reduced to that absolutely necessary for operation.

During the Carolina maneuvers, a detail from the 84th Engineer Battalion (Camouflage) spent five weeks with one of the horse-mechanized corps cavalry regiments. Their report is discouraging. "Oh, we move too fast to bother with camouflage," was the general attitude. Our answer is this: "You don't move all of the time, and when you stop, camouflage! Your observations will be more accurate and more complete if you can make them undiscovered. Your chances of getting vital information back to your command are infinitely greater if you can remain undetected." The day of the spectacular frontal attack passed with the "Charge of the Light Brigade." It made a good poem and a lot of dead heroes, but it was bad tactics. Camouflage may take some of the dash out of cavalry operations, but putting it bluntly, a dead cavalryman is of no use to anyone except his insurance beneficiary. Remember General Braddock! He was bold and disdainful of the very effective camou-

flage methods of the Indians. He's another who learned his lesson just a little too late.

It is not meant to infer that this attitude pervades the cavalry, but it should be corrected where it exists. Time and again, the writers saw scout cars draw up in the open at crossroads and in towns. You can't fool the enemy if you show your hand before the betting starts.

Observation flights brought out one point which has been mentioned before. That is, a single clue is all that's needed to give away a position. Time after time our attention was attracted to an area by tracks, smoke or flashing windshields. Closer inspection disclosed bivouacs. If our attention hadn't been attracted, we probably wouldn't have picked out those patches of woods, because from 5,000 feet you can see a lot of land, and at 200 miles per hour, you don't get a chance to give detailed inspection to all the possible troop sites in that area. If you can escape attention, you have a good chance of getting by unobserved.

As long as the present conflict continues, science will work diligently to add to the capabilities of the aircraft and the camera; so, too, will the adeptness of the air observer and the photographic interpreter increase with experience. In order to counteract these advancements in science and experience, it is the responsibility of all to redouble our efforts to master the technique of camouflage or protective concealment. This can only be accomplished by continual experimentation, exchange of ideas between branches of the armed forces, and constant application of principles recognized as fundamental.

Most forms of natural life have become instilled with an inherent instinct for concealment which governs their movement when under observation. Nature has favored them with certain colorations and forms which further aid them in the deception. This instinct, lost to us through civilization must be reëstablished by study, instruction, training, and repetition.

Completed Staff Work*

COMPLETED STAFF WORK is the study of a problem, and presentation of a solution, by a staff officer, in such form that all that remains to be done on the part of the head of the staff division, or the commander, is to indicate his approval or disapproval of the *completed action*. The words *"completed action"* are emphasized because the more difficult the problem is, the more the tendency is to present the problem to the chief in piece-meal fashion. It is your duty as a staff officer to work out the details. You should not consult your chief in the determination of those details, no matter how perplexing they may be. You may and should consult other staff officers. The product, whether it involves the pronouncement of a new policy or effects an established one, should, when presented to the chief for approval or disapproval, be worked out in finished form.

The impulse which often comes to the inexperienced staff officer to ask the chief what to do, recurs more often when the problem is difficult. It is accompanied by a feeling of mental frustration. It is so easy to ask the chief what to do, and it appears so easy for him to answer. Resist that impulse. You will succumb to it only if you do not know your job. It is your job to *advise* your chief what he ought to do, not to *ask* him what you ought to do. He needs answers, not questions. Your job is to study, write, restudy and rewrite until you have evolved a *single* proposed action—the best one of all you have considered. Your chief merely approves or disapproves.

Do not worry your chief with long explanations and memoranda. Writing a memorandum *to* your chief *does not* constitute completed staff work, but writing a memorandum for your chief to send to someone else does. Your views should be placed before him in *finished form* so that he can make them his views simply by signing his name. In most instances, completed staff work results in a single document prepared for the signature of the chief, without accompanying comment. If the proper result is reached, the chief will usually recognize it at once. If he wants comment or explanation, he will ask for it.

The theory of completed staff work does not preclude a "rough draft" but the rough draft must not be a half-baked idea. It must be complete in every respect except that it lacks the requisite number of copies and need not be neat. But a rough draft must not be used as an excuse for shifting to the chief the burden of formulating the action.

The *completed staff work* theory may result in more work for the staff officer, but it results in more freedom for the chief. This is as it should be. Further, it accomplishes two things: (1) The chief is protected from half-baked ideas, voluminous memoranda, and immature oral presentments. (2) The staff officer who has a real idea to sell is enabled more readily to find a market.

When you have finished your *completed staff work* the final test is this:

> If you were the chief would you be willing to sign the paper you have prepared, and stake your professional reputation on its being right?

If the answer is in the negative, take it back and work it over, because it is not yet *completed staff work*.

*Emanated from the Office of the Provost Marshal General, War Department. — Prepared by Colonel Archer L. Lerch, J.A.G.D.

General Hawkins' Notes

Some Lessons from the War

THE tragic events at Pearl Harbor on December 7, 1941, contain some lessons that are well worth thinking about by any cavalry commander as well as by the commanders of other forces and services.

The first thing that strikes one's mind is the question of security for a command whether in a position of defense, marching on roads or across country, or in actual battle, offensively or defensively. Measures for security are measures for the immediate protection of a command whatever its mission may be. If the mission of a cavalry command is that of reconnaissance to gain information for the higher commander who assigned the mission, there are certain measures that must be taken to prepare this reconnaissance. These measures are distinct and different from the measures for security which are taken to protect the command itself. If the mission of a command is to hold a position defensively, it uses patrols and outposts to protect itself from surprise, and it may be necessary also to send out reconnaissance patrols to obtain information of the enemy which has little or nothing to do with the immediate protection of the command.

Thus, we differentiate between information patrols and security patrols, although information and security are inseparable, and reconnaissance is one of the methods used for both purposes.

At Pearl Harbor, under the circumstances preceding the attack, there was necessity for those security measures which provide warning against surprise. There was also reason for other measures which constitute one of the subjects for this article.

The point that I wish to emphasize as a lesson is that if we assume in any possible case that the usual security measures are taken in the way of patrols, listening devices or covering forces, there is still something else necessary to do. It is simply this: After providing for the warning of a command, the commander must never regard his command as being perfectly secure. The enemy may be clever. He may outwit the leaders of our security elements. Our combat patrols may be imperfectly trained, our covering forces may make mistakes. And therefore, after taking every practical measure for warning against surprise, we must be further prepared in case these measures fail us.

For example, in a defensive position, we must keep our airplanes separated so that they cannot be caught by enemy bombers in close formation on the ground and too many of them unnecessarily destroyed. Even if they have to be guarded by numerous squads of soldiers against sabotage or ground attack, it must be done. Furthermore, our ground troops must be dispersed in small groups and not formed or camped in masses. These small groups, separated for this purpose, may be utilized to guard our dispersed airplanes, our artillery or our small groups of picketed horses. At night, our small groups of soldiers may be made as comfortable in bivouac as they are in large closely formed camps.

A cavalry command moving across country, either on a mission of reconnaissance or to attack a column of the enemy, or other purpose, disposes a covering detachment in front, moving by bounds. Its flanks are protected from surprise by combat patrols. In this manner it can move swiftly and fearlessly. But the commander should not count too certainly on these dispositions. The command must move in some formation ready for instant combat. Also, he may be attacked suddenly by hostile aircraft, and he must be able to deploy instantly into a dispersed formation. There will not be time usually to deploy from a closed formation. But there will be time if his command is already partially deployed by using a maneuver formation consisting of successive lines of platoons or squads.

He may be attacked by hostile armored forces moving rapidly against him upon the very heels of his retreating security elements. But, because of his formation, he may be able to avoid the devastating effects of a surprise. Further deployment in a direction away from the enemy or towards some rough or timbered ground will give him opportunity to lead the enemy away from his desired direction of advance, or into a trap composed of other friendly troops prepared with artillery and antitank guns to meet an armored onslaught. Or, his quick retreat may enable our commander to establish himself on suitable ground, difficult for armored vehicles and affording our cavalry command an opportunity to use its own antitank guns.

A command drilled in such tactics does not become demoralized by such sudden and rapid retreat, because the men know what it is for. It is something they have practiced.

By these means a cavalry command may make itself invulnerable to attempted surprise attack by an enemy of any kind, air forces, armored forces, infantry, or artillery. And, after dealing with such situations, our command may resume its march by moving around the enemy or even forward to attack him under favorable circumstances.

Thus, a cavalry command can move toward its des-

tination very boldly. By using the proper security measures, and supplementing them by using proper formations, it is prepared to take care of itself under any circumstances. Even in battle or in delaying actions the same principles can be applied.

It is necessary for every cavalry officer to become air minded and armored force minded. These are the two new branches of the service that have grown so powerful and devastating in their attacks against troops that do not understand them and are unprepared to meet them. A cavalry officer must therefore study them and know their formations, armament, effective ranges, speed, as well as their necessities and limitations and vulnerability to various kinds of fire. He then can make his preparations with foresight and prudence. If he knows what he wants to do, he can train his troops to do it without the consternation, demoralization and panic that so often overtake a body of troops that do not know what to expect or what to do under unforeseen emergencies and surprise. Having determined what the chances are in carrying out his mission, he can make his decisions and proceed with a clear mind and a stout heart.

War is becoming more complex. A cavalry commander must know not only how to deal with hostile air force, armored force, artillery, motorized infantry, marching infantry, and parachute troops, but he must also know how to utilize or coöperate with such forces of our own. Despite the brilliance and power of the war exploits of air forces and armored forces, our cavalryman must understand that cavalry is still able to care for itself and to perform certain important duties and missions better than any other arm. But the cavalryman must note carefully the new inventions and appliances and never underestimate them, while making the necessary adjustments in his own arm and taking the necessary precautions to meet new conditions.

From the battles in defense of Singapore come two other lessons. They are not new. They have been reiterated again and again in these Notes. They are known to our War Department. And yet, I wonder if they are kept constantly in mind and given the importance they deserve.

First, it is noted that the British troops have had to oppose the Japanese tanks by machine gun fire. The British artillery has had too much on its hands in opposing the Japanese infantry to be able to concentrate its attention upon enemy tanks. There were few or no antitank guns. Of course it would have been desirable for the British to have had some armored forces. They didn't have them. It is not always possible to have them available, especially for defensive action. But, and here is the crux of the matter, all ground troops should be considered ill-equipped unless they have a due proportion of antitank units armed with effective antitank guns. No large units of infantry or cavalry should ever go into modern war without these units. To be without them is as bad as to be without machine guns. The larger the command the larger should be the antitank units. Even the assignment of armored forces to a command will not compensate for the absence of antitank units. Whether an infantry force is sent to defend an island base or to engage in a great offensive campaign, it is not properly equipped unless it has its due proportion of antitank units. And the same may be said of any large cavalry force. Armored force and antitank force have their distinct rôles and neither one can properly substitute for the other. Nothing in our war production and the organization of our armies should be given greater importance or priority.

Second, the use of aircraft in supporting our ground troops closely is as fully important as its use in bombing ships and cities. Twenty years ago, before I ever heard of dive bombers, I wrote on this subject. And I was not the only cavalry officer who thought about it.

It would be easy for anyone who might read these statements to say, "Well, everyone knows that the British in Malaya would have been much better prepared to defend Singapore if they had had a considerable air force and armored force. It is stupid to write these statements now."

But I disagree. I am not referring to air force in general or to armored forces. The two old arms of the service, infantry, and artillery, are doing most of the fighting on every battlefield in this war. (And they would be better off if they had with them large forces of the other older arm, the cavalry.) And my contention is that these older arms ought not to be sent to fight our enemies without the protection given by strong units of antitank guns and the assistance given by dive bombers and fighter planes to oppose the enemy dive bombers. The first of these necessities, antitank units, is the more important until we are thoroughly equipped with everything to fight offensive war, including a large air force. This is true because our dive bombers without the protection of fighter planes would probably be destroyed by superior enemy aircraft. But, antitank guns in large numbers would help us fight a defensive war until we are fully equipped.

The lack of sufficient numbers of antitank guns has been a serious handicap to all the Allied Forces fighting in this war. Adequate numbers of antitank units with all large forces of infantry or cavalry would save our armored forces by relieving them of so many defensive tasks and holding them for offensive operations.

A cavalry force containing antitank units, whose guns are useful also for beach defense against enemy landing boats and other purposes, is much enhanced in value.

Let there be no half measures. Our infantry and cavalry should not be expected to make terrible sacrifices for lack of these accessories while our air forces and armored forces are being built up or going off on independent missions.

Certain persons, both military and civilian, are writing articles for magazines and newspapers purporting

to expound the lessons of the war which are perfectly obvious to everyone. Clever civilian magazine writers attempt to explain to the dull brains of the rest of us the great new developments. A writer for the *Saturday Evening Post* devotes the whole of a lengthy article to the disparagement of the Infantry arm of the service. Referring sarcastically to the old army saying, "The Infantry is the Queen of Battles," he says, "The Queen is Dead." He attempts to prove this by explaining the way in which the Germans used their armored forces and air forces in Europe. But he admits that there is still some use for Infantry. Well then, if there is still some use for infantry, and we all know that Germany, Russia, and everybody else, is still using hundreds of thousands of infantry, why disparage it? Do not those writers realize that such writings tend to lower the morale and spirit of our infantry? What difference does it make that the tanks and the planes have taken the brilliant rôles, if the infantry is still indispensable? Would Germany still maintain nearly three hundred divisions of infantry if she thought it should be disparaged as an arm? Note the fame which has come to the Australian infantry in North Africa, Malaya and elsewhere. Note the world wide admiration that is bestowed upon MacArthur's infantry in the Philippines. Note that the secret of the Japanese successes so far has been overwhelming numbers of infantry landing on beaches and maneuvering through jungles. Give as much credit as you please to tanks and planes which made these infantry operations possible. But do not belittle and disparage the infantry which has done most of the fighting and suffered most of the losses. War is a combination of all of these forces. Each of them merits respect and attention.

Imagine the dismay of fathers and mothers of our young soldiers who have been assigned to the infantry if they read that infantry is of little value. How do you expect that our infantry will have the *esprit de corps*, the zeal, the pride, the interest and the willingness to self sacrifice necessary for victory if every self appointed military expert with a flare for writing belittles, ridicules and disparages the arm of the service to which thousands of our young men must be assigned?

If every arm of the service is indispensable, the relative importance in any campaign of the various branches has no bearing whatever in our military preparations and organization except as to the number of men and arms assigned to those different branches. Let me remind the pseudo-experts again that without detracting one iota from the importance and sensational brilliance of armored forces and planes, the infantry of the armies of friend and foe still constitutes the major portion of their forces. These writers are rendering a distinct disservice to the unity, morale and zeal of our army. It is stupid beyond words for these persons to assume that our professional army officers have not foreseen for years these new developments that have come about in this war. The most important mistakes or failures in foresight and imagination can be charged not to the officers of the older branches but to the officers of the newer branches such as our air force which refused to recognize the necessity for coöperation between aircraft and ground troops until it was demonstrated by the Germans in France in the campaign of 1940.

Before our mobilization began in the late months of 1940, our army was so small and depleted, by the will of our people, that there was no opportunity to carry out tactical experiments on a truly large scale. Each of the branches of the service had to be maintained as a bare nucleus for the enlargment of the army, should that be necessary. Our present lack of readiness for the critical situation in which we find ourselves is not due in the slightest degree of respect to any fault in the army. It is due entirely and wholly to the attitude of our people, our pacifists and our politicians.

The most important lessons of the war are for those people, not for our army.

With our small and depleted army we had to establish and maintain the principles of training for modern war in all branches of the service, old and new. We could neglect none of them. The new branches, armored force and air force, had to be established and trained without completely sacrificing the older branches. How well we did our work is now being demonstrated. Our air forces and armored forces seem second to none in efficiency.

As far as infantry, artillery and cavalry are concerned, the fighting in the Philippines has demonstrated that our training methods have been first class and up to date. We all knew that the Japanese troops would be found to be well trained and formidable. But, on the island of Luzon, their only superiority over our troops has been their overwhelming numbers. Without this disparity, events have indicated that our troops would have more than held their own. In fact it has been shown that with equal numbers the Japanese would have been badly defeated. This only makes the present situation the more poignant. But it also gives hope for the future.

We do not presume to predict the future of infantry or that of any of the arms of the service, old or new. For all we know, air force may become or already has become the predominating force for war. But we have to take things as they are today. It would be only to betray the trust of our country if we say that we need only the air force and devote all our attention to that arm only. What we do know is that there are millions of infantry and other ground forces in action today. And, therefore, we must have those ground forces and instill into them a belief in themselves and a pride and spirit in this service.

We must have everything, and can neglect nothing. Therefore we must protect every essential element in the army from belittlement or disparagement if we expect it to fight victoriously for our country.

The Cavalry Replacement Training Center

By Brigadier General Donald A. Robinson*

TRAINING, as prescribed at the Cavalry Replacement Training Center, is based on Mobilization Training Program 2-2, War Department, July 22, 1941, as revised by War Department instructions of December 17, 1941, reducing the length of the training period at replacement training centers to eight weeks, with provision for two extra weeks. One of these, immediately preceding the eight week training period, is employed in receiving and processing incoming trainees. The other, immediately following the last week of training, is employed in final processing and in preparing trainees for shipment to the organizations to which they have been assigned. With obvious exceptions, made necessary by reduction of the training period, the number of hours allotted to general subjects, as prescribed in the Mobilization Training Program, is followed.

The mission of the Cavalry Replacement Training Center is to provide basically trained individual soldiers as replacements in all horse and mechanized cavalry units throughout the Army, these replacements to be capable of operating efficiently in garrison or in the field in the organizations to which assigned. Training includes basic training, training in horsemanship, training in motors, and training in weapons.

Basic training includes instruction in the Articles of War, military courtesy and discipline, military sanitation and first aid, care and display of equipment and tent drill, interior guard duty, defense against chemical attack, defense against aircraft and mechanization, hasty shelter and camouflage, dismounted drill, physical training, map reading, dismounted scouting and patrolling, combat training of the squad and platoon, organization of the Army, and inspections.

Training in horsemanship includes equitation, mounted drill of the squad and platoon, mounted scouting and patrolling, combat training of the squad and platoon, mounted pistol marksmanship, marches and bivouac, and care of horses and equipment.

The objective of horsemanship instruction is to qualify horse unit trainees to manage their horses, individually and in ranks, at all gaits, on the drill ground and over varied terrain; to execute all movements of the squad and platoon, including approach formations, combat formations, and the mounted attack; to fire the pistol, mounted, with alacrity and accuracy; to march; and to care for their mounts and equipment under all conditions. Emphasis is placed on quiet and smooth execution of all mounted movements and all work with horses.

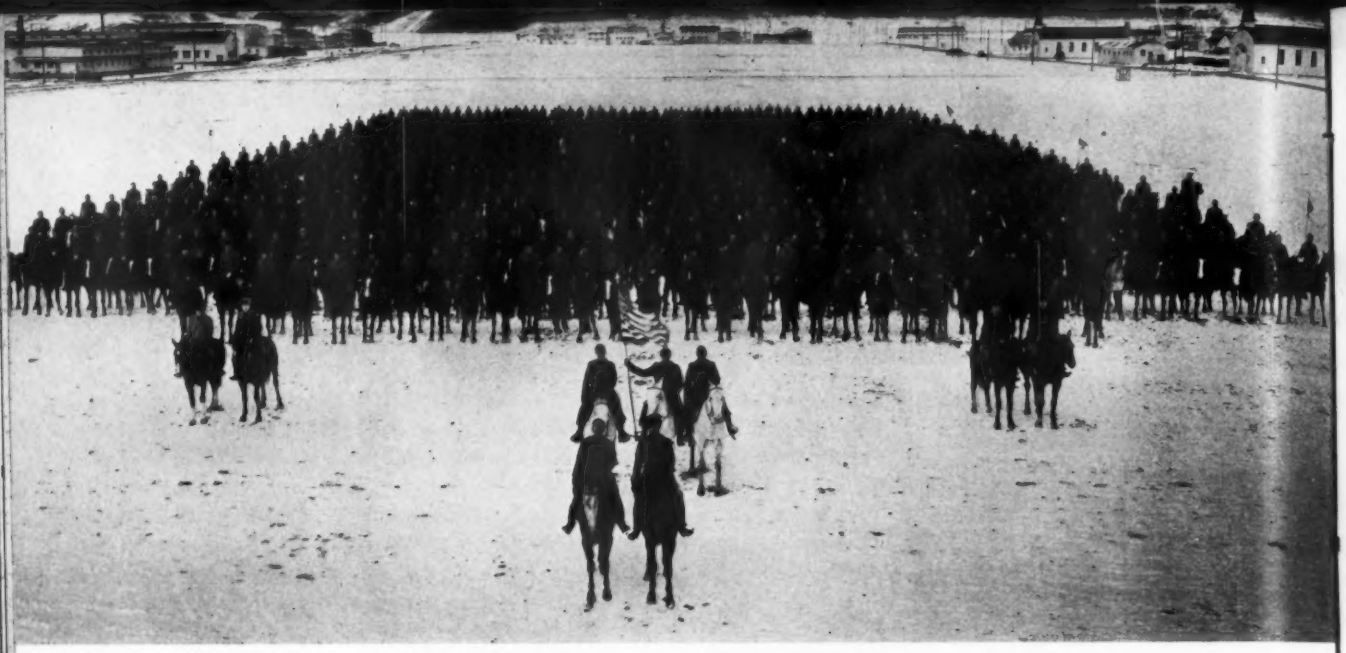
Training in motors includes elementary driving, advance driving, vehicular drill, road marches by day and by night, combat, loads and loading, administrative details and dispatching, demonstration of field expedients, and maintenance.

The objective of motors instruction is to qualify motor trainees in the operation and first echelon maintenance of one or more 4-6 wheel military vehicles, motorcycles or tanks. Instruction includes operation of vehicles in military formations and operation of individual vehicles on roads and across country under all conditions of road, terrain and weather.

Training in weapons includes preliminary rifle marksmanship, known distance rifle qualification (Course B), preliminary dismounted pistol marksmanship, dis-

General Robinson

*Commanding C.R.T.C., Fort Riley, Kansas.



A regimental formation of two squadrons of three troops each showing six of the fifteen horse troops of the C.R.T.C.

mounted pistol qualification, machine gun mechanical training, machine gun preliminary marksmanship, machine gun firing on 1,000 inch range and field targets, antiaircraft firing (miniature range), antimechanized firing (miniature range), combat firing, demonstrations of the 37-mm. gun, caliber .50 machine gun, 81-mm. mortar, and sub-machine gun. Instruction includes the technique of fire of all weapons. In general, the scope of training with weapons follows the procedure prescribed in field manuals.

The objective of weapons instruction is the preparation of the trainee to fire his weapons so as to exploit completely their powers on the battlefield. Rifle instruction includes a thorough course of preliminary training with both the M-1 and Springfield 1903 rifle. Record firing is conducted with the M-1; combat firing with the Springfield 1903. Pistol firing is carried on concurrently with machine gun instruction.

In addition to trainee instruction, the following special courses are conducted within the Cavalry Replacement Training Center: A school for officers who have been assigned to the Cavalry Officer Replacement Pool pending their assignment elsewhere; a school for such enlisted men of the permanent training cadre and for such trainees, on completion of their trainee instruction, as have been tentatively selected for admission to the Cavalry Officers' Candidate School; a school for clerks and a school for cooks. The selection of students for the clerks' and cooks' schools is made from trainees who have completed their trainee instruction and possess special qualifications for further training in these specialties.

The course for Pool officers embraces basic subjects, horsemanship, weapons, and calisthenics. The course for officer candidate prospects embraces general instruction, tactics, and weapons. The course for clerks provides a month's instruction in Army paper work and other clerical duties. The course for cooks provides a month's supervised practical training in various troop messes, designed to prepare men who are already cooks to fill vacancies as troop cooks in cavalry organizations, thereby supplementing the output of trained cooks furnished by the Cooks and Bakers School at Fort Riley. The need for trained clerks is general, and this Training Center has already furnished such personnel to other arms and branches as well as to our own arm of the service.

The present organization of the Cavalry Replacement Training Center provides a headquarters and headquarters troop, six training squadrons of four troops each, two training squadrons of two troops each, and a special training troop. The eight squadrons are grouped into four regiments. The enlisted personnel of one of the two troop squadrons is composed entirely of colored men. There are two bands: one white, and one colored.

In order to standardize training and insure adherence to prescribed methods and techniques, three functional departments were organized: the Horsemanship Department, the Motors Department, and the Weapons Department, each having its own chief, separate staff and corps of instructors. Under this system, which has fully demonstrated its efficiency, training is conducted by a combination of unit and functional control. Basic training is the responsibility of the training squadrons. Training in horsemanship is conducted by the training squadrons under the supervision of the Horsemanship Department. Training in motors is conducted by instructional personnel of the Motors Department assisted by the training units. Training in weapons is likewise conducted by instructional personnel of the Weapons Department assisted by the training units. The Special Training Troop, referred to in the preceding paragraph, performs the very useful task of relieving the regular

training units of the responsibility of attempting to train the comparatively small number of trainees who, upon being given the classification tests, are found unqualified to undertake the regular course of basic training. These men are assigned to the Special Training Troop under such classifications as: Non-language, illiterate, Grade V, mentally unstable, physically deficient. If their deficiencies cannot be overcome, by academic and other special training, they are processed for discharge under the provisions of Section VIII, AR 615-360.

The Classification Section, operating under its own chief, assisted by trained commissioned and enlisted personnel, performs the indispensable service of classifying all incoming trainees and determining, by questions and tests, the most suitable training assignment for each individual. As far as possible the trainee is given his preference. If he prefers service in horse cavalry, and especially when past employment and experience indicate his suitability, he is assigned to a horse troop. If he prefers service in a mechanized unit, he is assigned to a motor troop, if this assignment is consistent with his qualifications and the needs of the service. The classification process begins with the arrival of the trainee and continues throughout his course of training. The qualification cards received with each shipment of trainees from a reception center are sorted and corrected in the light of the later and more extensive information obtained by the Classification Section regarding each individual. Other information is added as it becomes available. Organization commanders are required to maintain progress charts showing the proficiency of each trainee, and at the end of the second, fourth and sixth weeks of training to furnish the Classification Section individual reports of progress on the forms provided. The Classification Section also gives mechanical and clerical aptitude tests to determine the qualifications of occupational specialists and other personnel for key positions, and the suitability of trainees to receive specialized training on the completion of the regular training period. The system is so thorough that trainees required for special assignments may be readily selected. Furthermore, the commander of any unit, on receiving a detachment of replacements from this training center, may determine the most suitable duty assignment for each individual by consulting the qualification cards which accompany that detachment. If the unit is a motor or mechanized unit the cards contain information as to what type of vehicle each individual is best qualified to handle, and with what weapon he is the most proficient; and equally complete data are furnished on the qualification cards of replacements for horse units.

Training throughout the Cavalry Replacement Training Center is governed by a master schedule. This is based on a 45-hour training week of five 8-hour training days and one 5-hour training day. Each 8-hour training day is divided into a ½-hour calisthenics period and two 3¾-hour instructional periods allotted equally over the 8-week period to: (1) basic instruction under training squadrons, (2) horsemanship instruction and motor instruction (periods are concurrent), and (3) weapons instruction. All trainees have calisthenics for thirty minutes each morning previous to the start of the first instruction period. Each 3¾-hour instruction period includes three 10-minute rest periods which are utilized as far as possible in giving oral instruction concerning the particular drill or exercise in which the training unit is then engaged. The last ten minutes of an instruction period is intended for movement of squadrons from one training department to another. Saturday mornings are devoted to inspections, lectures, ceremonies and open hours not assigned to specific subjects. Units in rotation stand retreat, or hold a retreat parade, daily, except on Saturdays, Sundays and holidays, throughout the 8-week training period. Units not attending retreat or parade have supervised mass athletics. On Friday evenings all squadrons are assembled for a combination retreat parade and dismounted review.

Weekly schedules, based on the master schedule, are prepared by the department chiefs for training activities under their supervision, and by squadron commanders for their respective troops. These are submitted to S-3, Headquarters Cavalry Replacement Training Center, ten days prior to the week involved. No deviation from weekly schedules is made without authority of this headquarters. All schedules are coördinated by S-3. Bands attend dismounted drill periods, except in inclement weather, in which case a drum corps is substituted. The two bands alternate in attending retreat parade and other dismounted and mounted ceremonies.

From the very beginning of his training, each trainee is carefully instructed in the required standards as regards posture, cleanliness, neatness, dress and soldierly deportment, and is then held to these standards by vigilant inspection, continual instruction and repeated correction, until compliance has become a habit. The same thoroughness is applied to every element of his training. Correct execution is insisted upon from the beginning. Mistakes and faulty execution are not passed over for correction at some future time, but are concentrated upon at once, the exercise being repeated until satisfactory performance is attained. Instructional personnel, in their dress, appearance and deportment, are expected to adhere to high standards and thereby serve as an example to trainees. Calm and orderly instruction is required. Noisy corrections and the "bawling out" of individuals undergoing training are prohibited. The high level of intelligence of our trainees, their interest in learning their jobs, their response to instruction, and the splendid spirit manifested by them, both at work and at play, are very impressive. Many trainees in each incoming increment possess educational and other qualifications for officer material, and many others will eventually become excellent noncommis-

sioned officers. From these groups the required number of temporary corporals are appointed to serve as squad leaders in trainee squads; and in these groups, of course, are found the men best qualified to fill the C.R.T.C. quota in the Cavalry Officers' Candidate School.

The physical plant of this training center consists of several hundred buildings and installations of standard types, providing housing and facilities for personnel, animals and equipment, and for the training, administrative and recreational activities of the command. The installation was admirably planned and constructed along functional lines. This permits each department to operate without interfering with the others, and enables units to move without interference from one activity to another. Each department controls its own administrative buildings, training facilities, and storage space for departmental equipment. For example, the Horsemanship Department is in charge of all animals, stables, saddlerooms, shoeing shops, riding rings, riding tracks and mounted drill grounds; and all stable crews operate under its direction. Stable management is standardized throughout the thirty-three stables. The target ranges, operated under direction of the Weapons Department, provide facilities for instructing two thousand men at one time in firing the rifle, pistol and machine gun.

The troop messes are efficiently conducted under the general supervision of the C.R.T.C. mess officer who requisitions the necessary supplies and makes distribution to the troops from a storehouse serving as a central distributing point. The officers' messes are also conducted under the supervision of this officer, the accounts being kept in his office from which the officers are billed for their board at the end of each month. The menus for all messes are excellent and the food is plentiful and well prepared.

Recreational facilities consist of an officers' club, conducted as a branch of the parent club at Fort Riley; a noncommissioned officers' club; two service clubs, one for white and one for colored soldiers; a recreation hall for each squadron; and the War Department Theater, in addition to which two service clubs, one for white and one for colored soldiers, are operated under civilian auspices in nearby Junction City. Each of the Training Center service clubs has a cafeteria, writing room, reading room and library, and is equipped with radio and "juke box." Dances for colored soldiers are generally held in the colored service club in Junction City. Dances for white soldiers are held once a week in the large main room of their Training Center service club, all departments of which are efficiently conducted by a capable staff of hostesses. Music for dances is furnished by two Training Center orchestras, one white and one colored. Girls from the surrounding communities are invited to these dances and they attend them in large numbers, accompanied by their chaperones. Floor shows, talent shows and radio broadcasts are periodically staged by trainee personnel, many of whom are professional entertainers.

Football, baseball and basketball teams are organized in season; and it is generally possible for the Training Center to produce at least one outstanding team in each of these sports, as well as a strong string of boxers. Troop, inter-troop, and squadron contests bring the best players to the front and these enter the "all-star" teams to represent the Training Center against outside opponents.

A closer view of the activities of the Motors, Weapons and Horsemanship Departments of the Cavalry Replacement Training Center may be obtained from separate articles written by the chiefs of these departments for this issue of The CAVALRY JOURNAL. (pp. 57-65 incl.)

At this time there are present in this training center 353 officers and 7,873 enlisted men; aggregate strength 8,226. Of the officer personnel, 207 are regularly assigned to duty with the training center, and 146 are assigned to the Cavalry Officer Replacement Pool. Of the enlisted personnel, 1,175 are members of the permanent instructional and administrative cadre, and 6,698 are trainees undergoing instruction.

The training center has been in operation about one year. The first trainees began arriving on March 15, 1941. When training of the last group of the present increment is completed on April 4, 1942, and that group has been shipped to designated organizations, this training center will have furnished the cavalry service in general and the Army at large with 21,377 trained replacements.

That the mission of this installation has been satisfactorily performed from its beginning, and that the high standards established at that time have been successfully maintained, are evident from the continued high quality of the product.

Discipline

After the organization of troops, military discipline is the first matter that presents itself. It is the soul of armies. If it is not established with wisdom and maintained with unshakable resolution, you will have no soldiers. Regiments and armies will be only contemptible, armed mobs, more dangerous to their own country than to the enemy.

—MARSHAL SAXE.

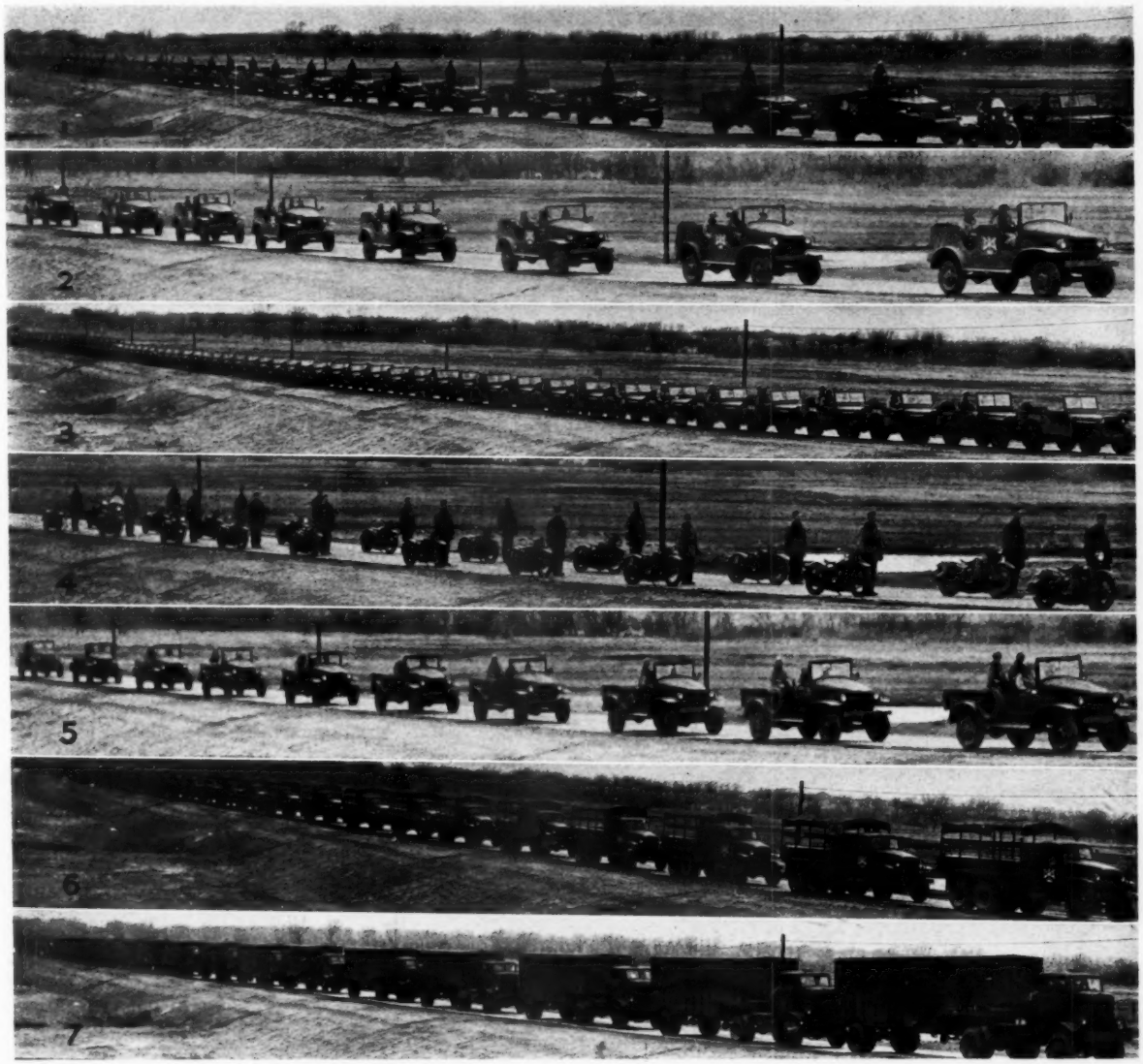
Motors Department, C. R. T. C.

*By Major Roland A. Browne, Cavalry**

THE primary mission of the Motors Department is to train drivers, specializing in the operation and maintenance of a particular motor vehicle. The secondary mission is the dispatching and operation of administrative vehicles for the supply and transportation of the C.R.T.C. and the maintenance and repair of all vehicles.

The Motors Department was first activated in February of 1941, under the command of Lt. Col. H. G. Holt. The officers assigned to the department at this time were Captain S. D. Slaughter, S-4, Lieutenant J. R. Degenhardt, Maintenance Officer, and Lieutenant R. E. Smart, Jr., Adjutant. The first month was spent in setting up the organization of the department, requisitioning supplies and equipment, and formulating policies and training plans. In March, the buildings of the C.R.T.C. were partially completed, and the staff moved from Camp Whitside to Republican Flats. This

*Department Chief.



Instructors and motor trainees: 1—With scout cars. 2—With command reconnaissance cars ½-ton, 4x4. 3—With bantams and scout cars. 4—With motorcycles. 5—With weapons carriers, ½-ton, 4x4. 6—With cargo trucks, 2½-ton, 6x6. 7—With semi-trailers. (Cavalry Portée.)

completed the groundwork for the training of men to drive Cavalry mechanized equipment.

Shortly thereafter, twenty-four M-1 Scout Cars were received from the 4th Cavalry. Soon after, there arrived six GMC 2½-ton stake body trucks and six Chevrolet passenger cars. These were followed by thirty-one 2½-ton GMC cargo trucks.

Officers were next assigned to the department. The task of organizing the lessons and instructional material was started. The first schedule called for instruction in scout cars and trucks. This schedule received its test run in the training of the cadre of the Motors Department and the noncommissioned officers of the motors squadrons. In this manner, the Motors Department of the C.R.T.C. "started 'em rolling."

In February of 1942, twelve short months later, many changes have occurred. The department consists of twenty officers and one hundred nine enlisted men. Now, the selectees are receiving training on nine different types of vehicles.

The training is carried out in six divisions, each containing one type of vehicle, or vehicles of several types with characteristics so nearly alike that they can be grouped together for training purposes.

The present organization of the department is as follows:

Division	*Officers*	*N.C.O's.*	*Vehicles*
Hq.	Maj. R. A. Browne, C.O. Maj. B. F. Stahl, Exec. Capt. M. D. Losey, Adj. Capt. J. R. Degenhardt, S-3 Capt. F. C. Welliver, S-4 Lt. J. J. Marron, Det. C.O.	3	
Trucks	Lt. H. E. Wright Lt. W. A. Bownds	17	64
Bantams	Lt. T. E. Jarman Lt. R. C. Barry	16	57
Semi-Trailers	Capt. A. W. Johnson Lt. R. D. Mansfield	15	29
Scout Cars	Lt. C. W. Ogelsby Lt. R. E. Smart	10	43 (28M3 (15M1
Motorcycles	Lt. G. H. Riser	5	24
Tanks	Lt. T. F. Ruane Lt. A. S. Peck Lt. D. C. Christiansen	3	4
Transportation	Lt. M. E. Church	66*	61

The motor squadrons at the C.R.T.C. are organized on the basis of four troops to the squadron. In each of two daily periods one motor squadron receives motors training for a period of three and three-quarter hours.

The Classification Section assigns selectees to the motor troops, according to their experience with motor vehicles in civilian life. Each motors trainee must pass the standard motor vehicle operator aptitude test. Troop "A" receives those men who have driven passenger cars and taxi-cabs; these men receive bantam instruction. Troop "B" consists of those men who have driven pick-ups and light trucks; they are trained by the scout car division. Troop "C" is assigned men who have driven heavy trucks; they are trained to drive the 2½-ton cargo trucks. Troop "D" is a mixed troop, consisting of semi-trailer drivers, motorcycle riders, and caterpillar tractor drivers; they are trained on semi-trailers, motorcycles, and tanks.

When the men arrive at the motor park for their first period of instruction they are assigned to a particular vehicle. The original plans were to assign four men to the vehicle. Due to the shortage of vehicles the number of men to a vehicle runs as high as eight in some of the divisions.

At the end of the second week, outstanding selectees are picked to act as car commanders and assistant instructors on each vehicle.

A corporal instructor is assigned to a platoon of three to five vehicles. He oversees the work of his assistant instructors. During the early training he is responsible for most of the actual instruction.

Three to four platoons are combined together to form a section, which is commanded by a lieutenant, assisted by a line sergeant. Three to four sections are then combined together to form a division.

In addition to the corporal's duty as an instructor, he is also responsible for the rating of the men of his platoon. The corporal instructor rides with each man in his platoon at least once a week, and rates the man at this time. To give the training car commander additional responsibility, he is required to rate each man of his crew each day. The corporal then has a check, both on the car commander and the crew. In addition to these two checks, the section commander and the section sergeant make their personal ratings of drivers, selected at random. This rating in turn serves as a check on both the corporal instructors and the car commanders.

The training schedule is divided into two major parts; namely, primary and secondary driving. At the present time, each man drives from three quarters of an hour to an hour each day.

Primary driving starts with instruction in the function and nomenclature of the major portions of the particular vehicle. The men are told and shown how each major unit operates to result in a smooth running vehicle.

The next subject taken up includes inspections and maintenance. From this time until the course is completed, daily inspections and maintenance review are carried out. Attention is called to mechanical failures during training. Their cause is determined. Prevention is stressed. At least once a week each vehicle is completely checked by the car crew. This check includes chassis lubrication, battery inspection, cleaning of air filters, tire checking, washing, tightening. Oil is changed as required.

The men are then taught to feel out the gears in the

*64 enlisted drivers.

transmission with the transfer case in neutral. This allows them to locate all of the gears, and to practice double clutching, without looking at the controls of a moving vehicle.

They next progress to a large circle, where driving habits and the shifting of gears can be checked and errors corrected. This type of driving is very helpful in familiarizing the men with the particular vehicle. At the same time the instructors check the progress of their men.

During the mounted instruction, one half of the men are dismounted from the vehicles. They receive instruction on safety precautions, road rules and traffic regulations, trip tickets, accident reports, convoy regulations, arm signals, cross country and night driving. The dismounted instruction keeps ahead of the mounted instruction. The men know what is expected of them as their training progresses. These groups are shifted each period. All men receive both types of instruction.

The advance driving begins with a closed column on improved road. The men are observed and errors corrected. As the drivers improve and learn to know their vehicle, they move at more extended distances and onto secondary roads, unimproved roads, and finally to cross country driving over difficult terrain.

The men are given map problems, in which they are allowed to pick their own route between two given points, usually over a road net that they have not traveled before. This trains them to pick routes that are most adapted to their type of vehicle and its tactical employment.

Finally the men are given experience in night marches. They are started with lights on improved roads, then with blackout lights, both on roads and cross country.

Selected men who claim to be, or are classified as mechanics, are also tried out in the maintenance shops. They work under the supervision of the shop mechanics, and the best of them are rated by the department as mechanics.

The Motors Department is planning for a large increase in personnel and vehicles in the near future. The present plans call for a large increase in motors training, which will necessitate more than doubling the present organization.

Weapons Department, C.R.T.C.

*By Major Fred T. Manross, Cavalry**

THE present organization of the Weapons Department includes a department chief, Executive officer, plans and training officer, adjutant and detachment commander, supply officer, range officer, two section chiefs, and nine commissioned instructors, two of whom are also on duty with the Departmental Detachment. The latter is organized into nine instructional groups in order to cover the instruction of nine troops at a time. The Detachment also includes headquarters, matériel, supply and range sections. Each instructional group consists of one lieutenant instructor commanding, a staff sergeant, and four to five enlisted instructors. For the purposes of control and supervision of training and range practice the instructional groups are further organized or integrated into two sections of five and four groups respectively. Each section is commanded by a captain section chief. The training and range practice for both sections is controlled and supervised by the Department Chief through the Executive Officer. This organization has worked well and has produced uniform results. The two section system has proven itself of further advantage in conducting concurrent pistol and machine gun instruction, in that one section conducts pistol instruction while the second conducts machine gun instruction. At the completion of the scheduled instruction prescribed for each weapon, including range practice, equipment and weapons are exchanged and instruction reversed between sections.

The Supply Officer, Lieutenant Abner C. Hutcherson, and his two assistants, Master Sergeant Roscoe R. Grider and Staff Sergeant Marshall A. Tubbs, have rendered admirable services in matters of supply and the care and upkeep of matériel which has been maintained in efficient operating condition regardless of weather and long hours.

An ingenious device developed by Lieutenant Hutcherson is the present method of brass inspection. Heretofore the inspection of empty brass for. live rounds, live primers or extraneous materials before shipment to the Ordnance has been a big problem because the Department uses a truck-load of ammunition every day. Many different methods of racking brass for inspection were tried before the present method was developed. It enables brass inspection to keep ahead of firing. The present racks are as shown in the accompanying photograph and are designed as follows:

Two 12″ boards, 8 feet in length, are fitted together the same as an eave on a house to form a rack with two sides. There is a 3″ board on the bottom of each side, and at both ends of each side there is an

*Department Chief.

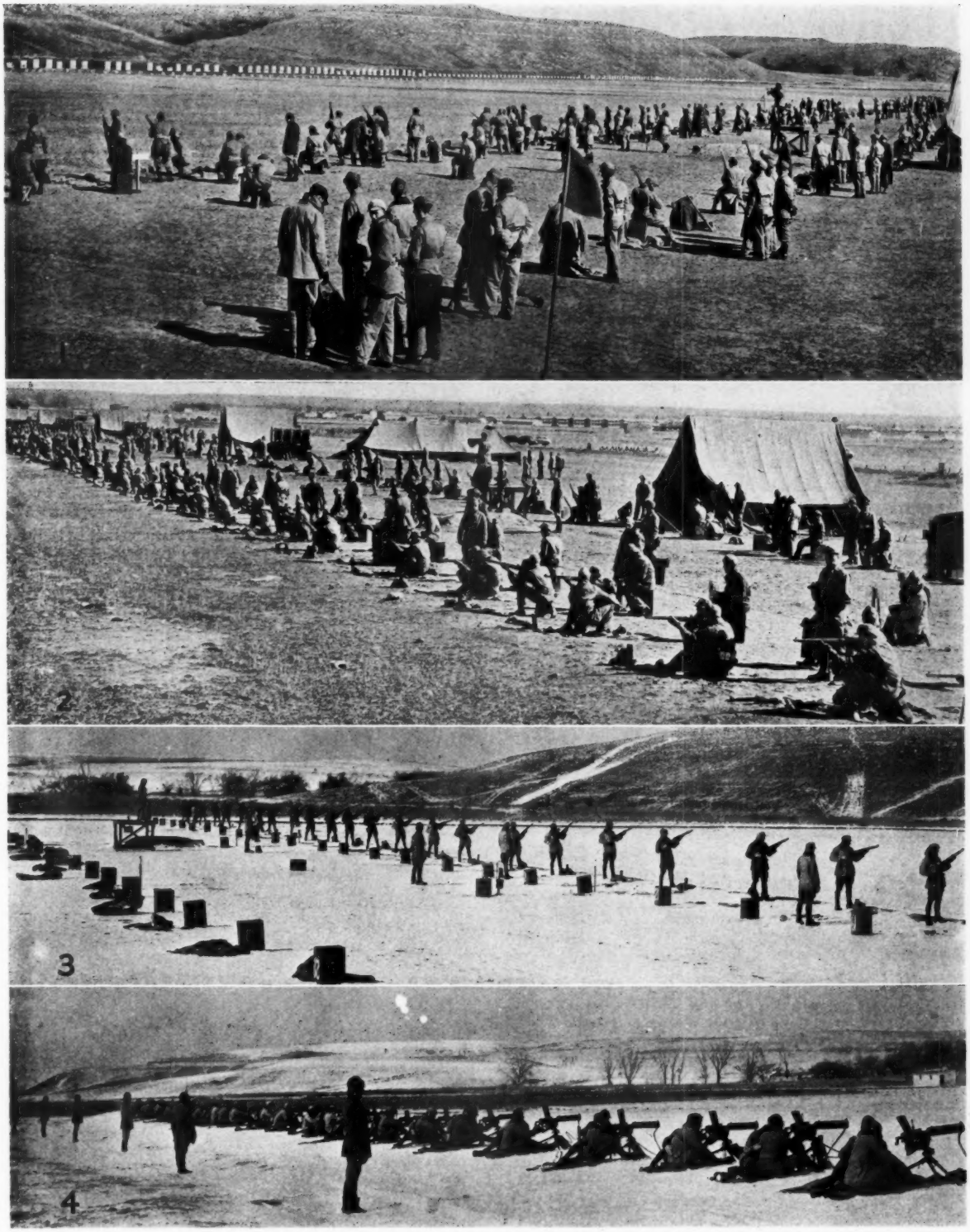
8″ trap door. Below the trap doors are troughs through which empty cases pass after inspection. The racks are set upon four legs, the height being such that one need not bend over nor reach while working. Each rack will hold five boxes of empty cases and twelve men working on two racks can put out ten boxes in one hour without difficulty.

The Range Section in conjunction with the Post Range Officer operates and services all ranges used by the Training Center, and has, at times, serviced them for the Cavalry School and other organizations. To give some idea of the magnitude of the task, the firing line, when on the rifle range, is over one-half mile long. The various pistol groups, due to intervening aircraft and MG 1,000″ ranges, are spread over a line nearly a mile long. The rifle range is an enlargement of the old National Rifle Range from 100 targets to 225 targets. Plans are being made at the present time for an additional 25 targets, making a total of 250 targets. All known distance rifle firing is conducted on this range from the 200 and 300 yard firing points as well as long range machine gun practice from the 500 yard firing point. The range, together with the area west to Milford Gate, is used for rifle combat firing. The Governor Harvey Moving Target Range which is, in part, superimposed on the eastern flank of the National Rifle Range, is used for moving target firing with the machine gun. Most of this firing is done at 500 yards. The pistol ranges consist of five groups of thirty targets each, extending from Republican Point east along Sherman Heights to the Hippodrome. Near Republican Point, and between two of the pistol groups, is a newly constructed double antiaircraft range. To the east and superimposed on two of the pistol groups is the Landscape Range used in conjunction with instruction in the technique of rifle fire. Between the two easternmost pistol groups are the 1,000″ machine gun and 1,000″ antitank ranges. Field firing with the machine guns is conducted on the high ground to the north of Breakneck Canyon. There, a new field range has been laid out with an excellent field of fire. Plans are under way for class B and moving target ranges in this area. It is also proposed to consolidate the pistol, machine gun and antitank ranges along Sherman Heights into separate areas and thus simplify matters of control and servicing. The range section, under Captain Howard H. Ruppart (Range Officer), assisted by Staff Sergeant John Palonis, has done an admirable job in keeping all ranges in fine shape and serviced under all weather conditions.

In conclusion, weapons training has proven intensely interesting, and the reaction of the trainees most encouraging. They show a great deal of interest in the M-1 rifle.

In addition to scheduled training, the Department has conducted several equipment and firing tests for the Cavalry Board. If any part of weapons training can be selected as the most important in the entire train-

1—Loading, portable machine-gun racks. 2—Brass salvage. 3—Detachment mess. 4—Detachment barracks.



National Rifle Range scenes: 1 and 2—Instruction practice. 3—Rapid fire; watching for the targets to appear. 4—Machine-gun instruction.

ing period, it is the first week on the rifle range. The habits of correct shooting and fire discipline inculcated there remain with the trainee throughout the rest of his weapons training. And the hardest part of that week (Kansas weather and winds notwithstanding) is making the coach watch his man and not the target. Good coaching produces good shots and good shots high qualifications.

Horsemanship Department, C. R. T. C.

*By Lieutenant Colonel E. M. Burnett, Cavalry**

THE Cavalry Replacement Training Center is approaching its first birthday! We recently have received our fourth increment of trainees. The Cavalry may wish to know what experience, thus far, has taught us with respect to training our future cavalrymen in horsemanship.

THE PROBLEM:

Our energies are directed largely, as would be expected, to establishing a uniform and high quality of performance in such horsemanship subjects as are covered, and to constantly increasing the amount of time in the saddle. In this connection we are forced to consider that:

1. Only approximately 20 per cent of the men who come to us have ridden or worked with horses. This, of course, varies considerably between troops and platoons, and even among squadrons, depending upon the section of the country from which the predominant number of trainees come. It is no doubt realized that most of those who may know how to ride must be re-taught in order to acquire the military seat.

2. While the average intelligence is high, there is a wide range of variation in intelligence schooling and aptitude.

3. For reasons of sound economy, we have planned for three men to each horse.

4. In order to reduce the overhead to a minimum and to utilize to the greatest extent the specialization of the departments, the number of instructors organic in the troops is small. Each troop of two hundred and twenty men has as its regular instructor complement of four officers including the troop commander; four sergeants and four corporals. This means that the platoons (three squads) are directly instructed and supervised by a sergeant or a corporal.

5. With five troops (forty platoons) riding at one time, we must assign to the many platoons sufficient training area near the stables to utilize the time allotted to the best advantage.

6. We must make plans to carry on effectively the training as scheduled, despite the extremes of cold and hot weather, heavy snow and severe rains, accompanied by high winds, which are characteristic of Kansas.

RECENT CHANGES:

The training of the current increment (the fourth) is accompanied by two major changes. The course of instruction has been reduced to eight weeks, and the training periods have been changed from three of 2½-hours each per day to two of 3¾-hours. This lengthing of the training period saves a good portion of the time formerly consumed in moving to and from the stables, in grooming, in getting started and getting ready to leave, with the result that more time is spent in the saddle.

To complete the picture of the general plan of training, instruction of the men assigned to horse troops, of which there are fifteen, is divided among one third horsemanship, one third weapons, and one third basic (dismounted) subjects. As a rule, two of these three divisions of instruction are covered each day. Therefore, in horsemanship, training is received by horse troops three or four days per week, and the Horsemanship Department is involved daily in the training of two of the three "groups" of five troops.

FUNCTIONAL TRAINING:

Horsemanship training during the first increment was carried on along functional lines. At the beginning of the second increment, in the search for improvement, instructors of the Horsemanship Department were transferred to the training troops, and instruction in horsemanship was conducted by the troop officers and cadres. The instruction was planned, coördinated and supervised by the Horsemanship Department.

Special schools, classes and demonstrations, some during, but many out of training hours, have been used in an attempt to produce a uniform and high standard of performance and instruction on the part of troop officers and cadre personnel. There is, however, under this system a considerable time lag in securing correction of errors and changes in methods of instruction where the need for improvement is indicated. Consequently, during the third and fourth increment, ten lieutenants of the Horsemanship Department were attached to the horse troops to assist in their training. Two of these officers are assigned to each troop when scheduled for training in horsemanship.

SHORT CUTS:

Many short cuts have been developed to utilize most effectively the limited time available and to further increase the amount of time in the saddle. For example:

1. Moving to and from the drill areas (each platoon is assigned to a specified area and route) calisthenics, and close and extended order drill are practiced.

2. Instruction in horsemastership and the theory of horsemanship is given during rest periods by means of brief discussions and demonstrations in platoon groups.

3. Mounted pistol targets have been erected along one side of the rectangular track in each platoon drill area. During equitation periods, as each trooper passes the targets, on either hand, he discontinues the exercise, takes the reins in the left hand and thrusts at the targets.

*Department Chief.

Top: Continuous exercise found most effective in basic equitation is work by threes . . . merely riding in column is avoided as much as possible. Bottom: Portée demonstration.

INSTRUCTIONAL SHORT-CUTS INCREASE TIME SPENT IN SADDLE

Consequently, when the time comes actually to fire the pistol, the technique of firing will have been sufficiently established through this habitual practice. It will then only be necessary to take up the safety precautions prior to going on the range.

4. Familiarity with hand signals is facilitated by having the men execute them on command as a part of mounted calisthenics.

5. Riding and mounted drill are taken up in the first lesson! This seemingly ambitious feat is accomplished by having a man on the ground lead a mounted man's horse. Instead of the usual riding (or rather leading) in a circle, mounted drill movements are used in the exercise. In addition to teaching mounted drill from the start, this procedure causes the recruit to relax through having something other than his horse to think about.

6. The equitation movements used are such that, once set in motion, they are continuous, permitting the instructor to concentrate on making corrections and relieving him of the necessity of constantly giving commands. In addition, the necessity of guiding his mount and maintaining some sort of formation appears to encourage the young soldier to relax. The continuous exercises found to be most effective are movements by threes, alternate track and circle, and serpentines. Merely riding in column of troopers on the track is avoided as much as possible.

7. It has been found that green riders make faster progress, and that the instructors' work is facilitated, if the trot is reduced from the prescribed 9 to 8 miles per hour. A fast trot makes it almost impossible for the recruit, in his early stages of training, to handle his mount in anything like the desired manner. If the trot is slowed to the 8 mile rate, correct performance increases very rapidly. Lack of knowledge of the correct rate for all gaits has been observed among noncommissioned officer and officer instructors. To remedy this, and to fix the 8 mile trot, five 1-mile gaiting courses, and a test course, have been laid out on the drill area.

8. Pack demonstrations have been eliminated. Instead, one pack and pack horse accompany each of the eight platoons of the troop during all mounted work. Every man has an opportunity to saddle, unsaddle, and handle the pack animal, and all constantly observe the use of this animal and his equipment.

STABLE MANAGEMENT:

There are in use at the Cavalry Replacement Training Center thirty-three stables, with adjoining corrals, to house sixteen hundred horses. In addition, there are eight shoeing shops. The management of the stables is the responsibility of the Horsemanship Department.

The physical set up of the stables is uniform throughout with respect to the location of saddle rooms, grain and hay rooms, etc., and the arrangement of equipment is also uniform for all stables. In each saddle room there is the same number of pegs in the same order on the same wall; the gun-boot racks, cleaning kit boxes, the Phillips pack saddles are in the same place; forage charts, shoeing records, fire fighting equipment, signs, trash cans, tools are uniform and uniformly placed; stalls are uniformly located and numbered; draft horses are in similar stalls.

The thirty-three stables are divided, for administration, into six stable divisions, five "operating" divisions and a Headquarters, Staff and remount division. Each is in charge of an officer as stable division commander. Within an operating division there are three stable units of two stables each. These stables are in column and are commonly referred to as the front and back stable. The stable units contain one hundred and four horses and are under the direct supervision of a stable sergeant who has, as assistants, one stable orderly, a teamster and a daily detail of six stable police from the horse troops.

An interesting feature of the stable division organization is that all the sick, out of condition, and difficult horses, as well as the officers' mounts, are placed in one stable, the front stable of the center unit. Consequently, all the horses in two units (104 riding horses each) and one stable (center rear, 50 horses) of each division are, at all times, available for duty.

The stable division organization is also coördinated with the assignment of training troops. Each of the five troops composing a "group" is assigned to a stable division. Within the troops a uniform assignment of platoons to stables is made.

Originally a horseshoer and saddler were assigned as members of each stable unit crew, but experience has indicated the desirability of centralizing both of these activities.

Reduction of the number of horses on sick report has been a major objective of our stable management. An average of only sixty-four horses have been on sick report daily. Close coöperation with the Veterinary Officer, analyses of the causes of sickness, daily sunning of blankets, constant supervision of feeding, and prompt preventive measures have accounted for this good record.

A simple device which is believed to contribute to the reduction of the sick list is the installation of a back bar in the stalls. The effect of this is to produce a narrow box which permits not only freedom of movement but serves as a rest for the saddle during instruction in, and routine cleaning of, equipment. A valuable by-product of the use of back bars is a considerable saving in halter shanks.

SPECIALIST TESTING:

In addition to training in horsemanship and the upkeep of the horses and stables, the testing of specialists is an important and valuable activity of the Horsemanship Department. Men with general classification test scores and aptitudes, which indicate that they can absorb instruction and acquire new techniques, and who

express or indicate an interest in activities of the Horsemanship Department, as determined by the Classification Section of the C.R.T.C. Headquarters, are sent to us for a week's testing after they have completed at least two weeks of training. After the test period they are returned to their troops to continue their basic training. The jobs included in the testing process are saddler, horseshoer, stable orderly, teamster, remount trainer, cook, and clerk. The objective is to determine whether a man demonstrates sufficient ability to absorb instruction and take interest in the activity in which he is being tested to warrant his being sent to a specialist school on completion of his course of basic cavalry instruction.

SPECIAL SCHOOLS:

In addition to cadre schools which are held after recall from drill, various other instruction is given in horsemanship and horsemastership.

Officers assigned to the Cavalry Officer Replacement Pool are given a short refresher course in such subjects as horsemanship, close and extended order drill, pistol marksmanship and stable management.

One officer and one noncommissioned officer from each horse troop attend daily, a course designed to increase their efficiency as instructors in the subjects taught in horsemanship instruction.

From time to time short courses in horsemanship are held for the benefit of enlisted men prior to enrollment as officer candidates.

In addition, schools for the further instruction of specialists, such as horseshoers, saddlers, teamsters, packers, and remount trainers are found desirable.

MOUNTED SPORTS:

Mounted sports for men in training and for noncommissioned officers and officers, are encouraged. Cross country riding, mounted wrestling, broom stick polo, gymkhanas, informal horse shows, and gaiting contests are established activities when weather and time permit.

After passing a test in horsemanship and horsemastership, qualified enlisted men, (noncommissioned officers and men in training) are issued mounted passes. These permit the holder to ride alone, or in groups, for pleasure during off-duty hours.

CONCLUSION:

We believe that we have a workable set up for horsemanship instruction at the C.R.T.C. and are clear as to the lines along which we should proceed. At the same time we are looking for further short cuts and economies in order to put over our instruction in the most effective manner and increase the time spent in the saddle.

March Schedules

By Lieutenant Colonel B. F. Hoge, Cavalry

MARCH RATE formulas and march schedules of a complicated nature appear every now and then in our textbooks and in our JOURNAL. Some commands have march tables printed and issued on small cards to the personnel. My objection to these methods is that they are unduly complicated, cannot be remembered, and the cards are soon lost, worn out or destroyed by rain and sweat. The method I wish to recommend is as follows:

Divide each hour to be marched into ten-minute periods. During each of the first five of these periods, walk 5 and trot 5, or walk 4 and trot 6, or walk 3 and trot 7, depending upon the rate of speed it is desired to march. During the last ten minutes of the hour lead 5 and halt 5. If a nine-mile trot is used the following rates of march will result:

5-5 schedule equals 5½ miles per hour.
4-6 schedule equals 6 miles per hour.
3-7 schedule equals 6½ miles per hour.

If an eight-mile trot is used each of the above rates will be reduced by one-half mile per hour. The above-quoted rates are not exact, but near enough so for all practical purposes. To memorize the above, it is only necessary to remember one set of figures, namely that the 4-6 schedule at 9 miles per hour gives a rate of six miles per hour, and that an increase or decrease of one minute of trotting causes an increase or decrease of rate by one-half mile per hour. Also, that an eight-mile trot reduces the rate by one-half mile per hour.

The above system has several advantages:

a. It is simple and can be remembered by all ranks.

b. It is flexible, because any one period of ten minutes can be broken into fractions, if terrain conditions make it necessary. Thus the 4-6 period can be changed to two 2-3 periods to fit the ground.

c. By starting the march when the minute hand is on one of the large number figures on the watch face it is comparatively easy to keep time accurately and avoid confusion.

d. Prior to start of march, the command can be notified of the schedule to be followed as, "We will march on a 4-6 schedule." Every one then knows exactly how the march is going to be made.

e. It provides for frequent changes of gait and the normal amount of leading.

f. A command trained to this system in daylight will march smoothly at night, because all soon learn what is coming next.

g. It obviates the need for a timekeeper, and keeps the command up to the rate desired because this rate is checked each ten minutes.

Loading Horses in Portée Trailer

By Lieutenant Stanley Archenhold, 2nd Cavalry

SINCE many of our horse cavalry regiments are now receiving portée trailers, a system of loading and unloading which has been developed in The 2d Cavalry might be welcomed.

LOADING–

a. Unsaddling and Formation–The squad should unsaddle and unbridle in rear of the trailer and place its equipment on the ground where it will not be in the way while loading. The squad then forms in column of fours in rear of the trailer. Both sets of fours then turn their horses over to their respective no. 3's.

b. Duties of members of squad–Under the direction of the corporal, as many men as are necessary lower the rear doors.

(1) *Corporal.* As soon as the rear doors are lowered, the corporal makes a careful inspection of the trailer to check the following:

(a) No projections, nails, etc., on inside of vehicle.

(b) All pins are present for doors, breast and tail bars.

(c) All mats are in place where wheel slots project into trailer.

(d) Side door in rear of trailer is closed and securely fastened.

(e) Front breast bar is in place and properly fastened.

He then causes No. 1 and No. 2 of the second set of fours to take a position on the left side of the ramp and No. 4 on the right side. He directs the first set of fours to return and take their horses.

(2) *First Set of Fours*–No. 1 followed by No. 2 lead their horses into the trailer. No. 1 ties both horses to the breast bar on the right side. No. 2 returns to the rear of the trailer. No. 1 remains inside. No. 4 leads his horse in and turns it over to No. 1 who ties it on the left side of the trailer. No. 4 returns to rear of trailer. No. 3 leads his horse up the ramp and passes the halter shank up to No. 1 who ties the horse in between No. 2 and No. 4. No. 1 leaves trailer by front side door. No. 3 leaves by rear door, goes to front door of trailer, enters, and remains with horses of first set of fours. No. 3 horse is followed immediately by No. 2 and No. 4 with the tail bar. No. 1 and No. 4 from second set of fours move to sides of trailer and place pins in tail bar as soon as it is in position. No. 1 brings in the breast bar for the second set of fours and assisted by No. 2 and No. 4 places it in position. No. 1 and No. 4 from second set of fours remain on sides of trailer and place pins in breast bar.

(3) *Second Set of Fours*–No 1, 2 and 4 first set of fours replace No. 1, 2 and 4 second set of fours along side of ramp. Second set of fours return, take their horses and follow same procedure as first set of fours. The corporal (using as many men as are necessary) supervises the raising and securing of the rear doors.

c. Equipment–No. 3 of both sets of fours remain in the trailer after their horses are loaded. As soon as all horses are loaded, the remainder of men get their equipment and pass it through the front side door to No. 3 of the first set of fours. No. 2 of both sets of fours returns and gets the equipment of their corresponding No. 3.

d. Personnel–All men except No. 3 of second set of fours and the corporal ride in same compartment with the saddle equipment. No. 3 of the second set of fours remains in aisleway between horses. The corporal makes a final inspection of his loaded vehicle and rides in the cab with the driver unless otherwise directed.

UNLOADING–

a. Saddle Equipment–Saddle equipment is unloaded in the same manner in which it was loaded. It is placed in rear of the trailer in such a place that it will not be in the way while unloading animals.

b. Animals.

(1) *General*–Men enter the trailer to untie their horses by means of the side doors. To prevent injury while unloading the first set of fours, it is *extremely important* that the rear side door be fastened and remain so from the time the front tail bar is removed until the last horse is out of the trailer. Of the three methods that follow, the first is believed to be the most satisfactory.

(2) *First Method*–The No.'s 1, 2 and 4 of the first set of fours take position as when loading. The tail bar is removed. No. 3 followed by No. 2 of the second set of fours unties his horse and backs him down the ramp. No. 1 followed by No. 4 then unties his horse, turns him around in the trailer and leads him down the ramp. No.'s 1, 2 and 4 then turn their horses over to No. 3 and return to the trailer to assist the first set of fours. The breast bar of second set of fours and tail bar of first set of fours are then removed. Horses of the first set of fours are untied and backed out until they can be turned around and are then led out of the trailer. The corporal then checks the trailer to see that all breast and tail bars are replaced in the trailer and that all doors are closed and securely fastened.

(3) *Second Method*–This method differs only in that the second set of fours backs the No. 3 horse out of the trailer, then takes down the breast bar and does a threes left about and lead out of the trailer. If this method is used, the rear side door *must* be closed and fastened before the breast bar is removed.

(4) *Third Method*–This method differs from the first in that the second set of fours leave the tail bar up. No. 3 unties the horses, pushes the breast bar to the left and executes a fours left about. They then remove the tail bar and lead the horses out of the trailer one at a time. The rear side door *must* be closed and fastened before the breast bar is removed.

EXPEDIENTS–

a. A latrine screen or the blankets of the squad may be used to load bad horses. The horse is led up to the ramp. Then the remainder of the squad, holding the canvas above their heads, encircle the horse, bringing the ends around the ramp and up to the trailer. Then they slowly close in on the horse. It is important that the canvas be of such a height that the horse can not see over it and that there are no gaps between it and the trailer sides or the ramp. If no canvas is available, several saddle blankets held together can be used instead.

b. Another method is to snap two additional ropes to the ring in the halter. One rope on each side is then passed well up into the trailer and out through the side. The horse is then led into the trailer and the side ropes are kept taut to prevent him from going off the side of the ramp. This has been found to be very satisfactory.

c. If trouble is experienced in finding room to get the No. 3 horse in, the following method is often helpful. Tie one lariat on the right side of the trailer well in front of the No. 1 horse. Then pass the lariat in front of the No. 1 and No. 2 horses and around the left side of the No. 2 horse. This lariat should be kept well up on the shoulder and buttocks of the No. 2 horse. Do the same thing on the left side of the trailer with the No. 4 horse. Then pull to the outside on the ends of both the lariats and lead the No. 3 horse into the trailer.

GENERAL HINTS.

a. Position of Horses.

(1) The first horse to be loaded and the last horse should be the boldest and most aggressive horses in the squad. This is especially true of the last horse.

(2) Timid horses should be the 2nd and 3rd horses loaded in the first set of fours.

(3) Mean horses should be loaded next to each other and on the outside if possible.

b. Whenever feasible, the rear wheels of the trailer should be placed in a small ditch or depression in order to allow the ramp to be as near level as possible.

c. If it is available and there is sufficient time, hay should be stacked along side the ramp to prevent horses injuring themselves by stepping off the sides.

d. When schooling horses to load, it is good practice to feed them in the trailer when they are loaded. Also, it is well in the beginning to make the loading the last thing for the morning so that when the horses are unloaded they associate that with the idea of being groomed and put away.

e. Hold shank close to the halter, keeping a firm pressure on the halter when the horse is led into the trailer.

f. It is important to get the tail bar in place *immediately* after the last horse of a set of fours has entered the trailer.

g. When loading green horses, it is advisable to use four men to handle the tail bar for the second set of fours.

h. Extra equipment carried by the squad should include two extra halters and shanks.

Quantity and Quality

By Captain Charles E. Brebner, Cavalry

PRODUCTION! PRODUCTION! "Keep 'em flying." Multi-thousands of planes, tanks, guns. Men, millions. Dollars, billions. All are snatches from the lyrics of this strident symphony of war effort. Production—that recurrent bass note. But there has been little publicity on the manufacturer of spark plugs for the war machine—the second lieutenants who yesterday were officer candidates.

Would you like to hear the story? Those of you who went through World War I will find much that is familiar in it. You may be one of the 80,000 officers who emerged from officer training camps on this side, or one of the 13,000 commissioned from AEF schools in France. At the beginning of that war we had 8,990 commissioned officers; 5,791 Regular Army and 3,199 National Guard. We needed about 200,000 for an army of 4,000,000.

This time, by the end of July, 1941, four months before we found ourselves actually at war, the strength of the Army had been augmented by upwards of 85,000 National Guard and Reserve officers, and the reservoir was not yet dry. However, despite the fact that our position was infinitely better in this respect than it was immediately prior to the last war, the necessity for qualifying many more young officers was undeniable. In recognition of this fact the War Department had ordered the inauguration of Officer Candidate Courses at the service schools in June of 1941. The program contemplated the attendance of 4,000 candidates for commissions in all branches annually.

The coming of war has necessitated a modification of the picture. Seventy-five thousand selected men will receive training as Officer Candidates. Here *is* a quantity production job, with the accent on quality.

Captain L'Abbe, of Tactics, employs an enlarged map to explain an attack problem.

Considering only the Cavalry component, let us look at the plant, the material, the process and finally, the product. You should be interested—you are going to be using it.

Many of you have seen the plant, been through it, perhaps worked on its assembly line during the days when the Cavalry School did "business as usual." Last fall you read in The CAVALRY JOURNAL* about the physical changes here: the new Academic building, new Motors building, new Communications building, new students' barracks. You noted that there are six subassembly lines, each represented by a department: Tactics, Weapons, Horsemanship, General Instruction and Publications, Motors, and Communications. But perhaps you overlooked in that article the very brief line at the end of a summary of classes. It read: "—in addition, 100 officer candidates." That group was, in a sense, our "test order." What lay ahead was not particularly obscure and we had to discover our retooling needs. The class proceeded well enough and a gratifying percentage won their commissions. Undeniably, however, the Second Officer Candidate Class, which began October 6, profited by what we had learned, and, in turn, contributed to our knowledge of the production problems.

On December 18 information was received that in the third class there would be 200 instead of 100 officer candidates. An extra schedule meeting, a doubling of orders for all mimeographed material and the "line" stepped up smoothly.

Now we are getting set for the next step-up. The first of four increments of 100 students each will start its course of 12 weeks on March 9. This first increment will consist of 88 candidates for Military Police battalions and 12 candidates for the Air Corps. On April 6 and every three weeks thereafter a group composed of 88 candidates for the Cavalry and 12 candidates for the Air Corps will enter. Of the candidates for the Cavalry, approximately 75% will be trained for mechanized organizations and 25% for horse organizations. This program of continuous production will extend into 1943. The Weapons Department is moving into a separate building. The various departments are selecting young officers to assist in the detail work and to understudy the experienced instructors. April 6, April 27, May 18, and June 8 will come, the material will arrive, the factory will be ready and the workmen will be, or rather are, willing and able.

The Army has earned a dividend from its twenty-odd year officer training program. The fact that we had a hundred thousand officers is very good. True it is that we won't have to train as many new ones. The significant fact is that, needing fewer, we can make a more critical selection than was possible during the last war. Obviously with better material a better product can be made. Let us take a closer look at the state of prefabrication of this, to us, raw material.

The prerequisites for selection are common knowledge. The individual must have indicated that he is outstanding—that he has potentialities as a leader. His mental capabilities have been rated by an IQ test. His background has been studied. Granted that college attendance is in itself, no touch-stone to insure success, still it is interesting to observe that of the present class 65% have attended college and 28% hold degrees. Approximately half of them enjoy varying degrees of familiarity with one or more foreign languages. As may be expected, they represent all fields of professional and commercial endeavor.

The attitude of these students, the temper of the material, is of paramount interest. These men are definitely "up on the bit." They are somewhat less disciplined than are the officer students in the Basic Horse and Mechanized Class but are more aggressively alert and inquisitive. They have a more tangible reward to work for. They are very attentive during lectures, are generally uninhibited in conferences and enthusiastically coöperate in applicatory exercises.

The plant and labor being ready and the material assembled, the wheels turn. Four of the subassembly lines begin simultaneously.

The first two weeks of instruction by the Department of Tactics are of a preparatory nature, including Map and Aerial Photograph Reading, Combat Orders, Analysis of Terrain and Organization of Troops. Upon this foundation are added in overlapping sequence: Attack, Security, Antitank and Antiaircraft Defense, Reconnaissance, Command and Staff Organization and Operation, Defense, Engineer Operations, Communications, Delaying Action, Counterreconnaissance, Logistics, Defense against Chemical Attack and Employment of Field Artillery. Tactical instruction is made extremely practical with the greatest possible proportion of hours within subjects devoted to outdoor applicatory exercises in which classes are organized into tactical units. The strongest accent is placed on the officer candidate as a *leader*. In map problems he is required to make decisions and on the ground he gets actual experience in troop leading of both horse and mechanized units.

The Weapons Department lathe turns and out come, not mere operators of weapons, but qualified instructors. In recognition of the impossibility of getting across every paragraph of the material contained in field manuals, the basic essentials have been refined out and reconstituted in an instructor's outline for each weapon and period of instruction. All instruction is based on these outlines. Each student receives a copy of the instructor's outline for *every* period. He has been cautioned to observe the manner in which instruction is accomplished. When he arrives at an organization he has in his hands an instructional set-up which he has seen operate.

Every lecture, every firing period, everything done by the Weapons Department is aimed at one ultimate goal

*"Old wine in new bottles," September-October, 1941.

This series of pictures shows the development of an attack problem worked out by an Officer Candidate platoon using ball ammunition. 1—Scout pointing out situation to platoon leader who has come forward followed by his messenger who, being farther down in the stream valley, is not exposed to hostile observations. 2—Platoon leader having met his squad leaders is issuing his orders for the attack. (Note dispersion and use of cover.) 3—Part of one squad making its approach using cover. 4 and 5—Rifle groups having reached open ground build up the fire attack. 6—The light-machine-gun squad supports the attach from high ground on the left flank.

—the use of weapons in combat. Instruction in mechanical functioning is keynoted by the pithy observation that "a weapon out of action is a weapon lost." The theme song of technique of fire is "Effective Fire When and Where Needed." 10° below zero or 110° above, rain, snow, wind, and dust (Machine-Gun Ridge *can* be a miserable place—remember?) the classes go on, according to schedule, converting the theoretical into the practical. A maximum of realism is attained when Weapons and Tactics conduct joint problems with ball-ammunition.

It is only to be expected that the instruction by the

Department of Horsemanship has been somewhat modified from the pre-emergency, hell-for-leather days of Fort Riley. Students now arrive who have never ridden or who have had very limited experience with horses. The situation is not eased by the fact that the greater number of available horses have had very limited experience with students. The first task is to build up the self-confidence of the students. Training begins with the most elementary instruction for a considerable period at slow gaits; it progresses into gaiting, marching, close and extended order drill and jumping over low obstacles. Instruction in care of animals, packing and adjustment of equipment, animal management and horse shoeing procedure are conducted concurrently.

At the completion of the three-month's course, the successful candidate has obtained a thorough understanding of the military seat in theory and in practice so that he can not only ride it but teach it to others; he has a basic knowledge of the use and application of the aids; he can guide and control a horse over varied terrain; he can put in practice approved methods of marching, care of horses on and after the march and in garrison; and he has acquired an appreciation of the capabilities and limitations of the horse and the necessity for and methods of conditioning.

The Department of General Instruction and Publications performs a number of varied processes on its sub-assembly line. They include: A Study of the Components and Mobilization of the Army of the United States, Military Courtesy and Customs of the Service, Military History, Current Military History, all phases of Troop Administration, Training Management, and Technique of Instructing.

That last one is of particular interest. It keynotes one of the principal objectives of the Cavalry School—the development of instructors. In Training Management the student becomes familiar with the broader aspects of military training. One phase, the Technique of Instructing, is broken down and taught in detail. The mechanism of instruction as set forth in Field Manual 21-5 and an elaboration of the process of preparation by the instructor are explained and demonstrated. The class is broken down into groups of 25 and each student is required to make a two to three-minute extemporaneous talk, the purpose of which is to enable the instructor to give each man an initial rating and to comment on faults of voice and manner. Next, a basic military subject is assigned for each individual to present to his group as a five to seven-minute lesson using visual aids. This performance is criticized by the instructor and by three other students. A more advanced military subject is then assigned to each student which he must present, employing the demonstration method, in an eight to twelve-minute period. This time he is criticized in greater detail by his instructor and three classmates. The instructors are, and the students become, almost meticulous in these criticisms. However, no attempt is made to subordinate the student's personality to an established pattern. To the contrary, every effort is made to exploit the individual's natural ability and eliminate only his acquired defects.

The Department of Motors contributes its piece to the final assembly by means of a series of conferences and demonstrations covering General Automotive Features, Gasoline Motors, the Army Maintenance System, First and Second Echelon Maintenance, Driver Training, Capabilities and Limitations of Combat Vehicles, Difficult Terrain and Stream Crossings.

It goes without saying that as he moves along from subject to subject in each department the student leaves behind him a pattern of grades which indicates his assimilation of the knowledge offered him. Equally obvious is the fact that possession of knowledge does not in itself qualify a soldier as an officer. Proceeding on the hypothesis that knowledge is the tangible factor, the School is particularly interested in what might be termed the intangibles—force, initiative, tact, sincerity, common sense, coöperation, and leadership—in arriving at the final decision to commission the candidate. Toward this end all instructors carefully study each student, and, periodically, the results of their observations are consolidated within departments giving each candidate a rating of unsatisfactory, satisfactory, very satisfactory, excellent, or superior. This rating is made entirely independent of his scholastic standing.

The end of the "line" is reached and out of the plant steps a man. He looks different than he did three months before, and it is not entirely the new uniform he wears. What have we produced? an officer? The paper he holds in his hand says he is. The bars he wears on his shoulders proclaim to the world that he is.

But, consider one more analogy. A bottle of champagne smashes against an intricate assembly of steel and a warship slides down the ways. It is a warship. Men have built it to be such. The papers proclaim it to be. But as it slips toward the water the men who built it don't know whether or not it will float, even though they have confidence that it will. It does float. It is a ship. It is classed as a warship. Is it ready to fight? You know the answer. At this time it has passed its first test in that it will float. It is now a hull, specially designed to receive the guns and other equipment that will make it, in fact, a warship.

Our erstwhile officer candidate has floated. He is an officer in the sense that all that can be practicably done to him in the Cavalry School, in the time allowed, has been done. That which will qualify him to be an officer in every sense of the word can and must be added by the application of responsibility under the patient guidance of his organization commander.

That we have confidence in our own product is evidenced by the fact that at the time of writing, 14 former officer candidates, now commissioned, are assigned to the Staff and Faculty of the Cavalry School and several more will soon be added. They are doing a fine job. They will do a good job for you!

Mobile Surgical Unit
First Armored Division

*By Major L. Holmes Ginn, Jr., Medical Corps**

WE have developed in the 1st Armored Division a mobile surgical unit that appears to answer the need for a field operating room in highly mobile warfare.

The writer, who was fortunate enough to have been on duty with the old 7th Cavalry Brigade (Mechanized) and with the 1st Armored Division since its organization in 1940, has long felt that it was necessary to modernize our medical equipment if we are to render close medical support to rapidly moving mechanized troops. It was but a short step from the kitchen trucks and machine shops of the early days of mechanization in our Army to the visualization of the surgical unit as it appears today.

During the spring of 1941 through the enthusiastic support of the Division Commander, Major General Bruce Magruder, it was possible for the 47th Medical Battalion (Armd) to construct the first model of a field surgical unit which has undergone a rigid field test during the fall maneuvers of 1941. To be sure that we would have the same mobility as the remainder of the service elements of the division the standard 2½-ton, 6 x 6 truck was selected as the vehicle upon which to construct the unit. The bows were raised to give additional head space, the canvas was replaced by sheet metal and the interior lined with plywood. The rear was closed by close fitting accordion type plywood doors. A window, closed by sliding metal shutters was installed in the front and above the level of the roof of the cab. This gave us a small room, relatively light proof and dust proof.

The interior was kept simple. In the front end of the body, hot and cold water tanks were installed, heat being furnished by a burner from the standard gasoline field range. Air pressure was applied to both tanks so that running water was available without depending upon gravity flow.

Shallow cabinets were fastened to one wall to hold the necessary surgical supplies. A larger cabinet placed between the two tanks afforded space for the more bulky items of equipment.

Standard headlight assemblies were fitted in each corner of the roof so that it was possible to adjust the beams. They were operated from the battery and proved a satisfactory method of illuminating the surgical field.

For an operating table the wheeled litter carrier as issued was used but was found to be quite unstable. We then installed eye bolts in the floor under each end of the table. From these light cables under spring tension were fastened to each end of the litter, thereby correcting this difficulty.

This arrangement had an additional advantage in that it was not necessary to move the patient from the litter on which he arrived at the station. Upon arrival the patient was placed on the wheeled litter carrier, preliminary examination and treatment was given and the litter carrier then wheeled into the body of the truck on an inclined track fitted to the tailgate.

Canvas wing tents extend from either side of the truck and give in effect a three room surgical unit. In actual use in combat, one side could be used for preoperative care and the other for minor surgery. This leaves the body of the truck itself free for the use of one surgical team.

We have used a three-quarter ton trailer which is towed by the truck to carry the additional supplies necessary for its operation, this has made the truck self-contained except for the necessary personnel to operate it. The time required to have it ready for operation has averaged about fifteen minutes from the time it stops. It is easily hidden in woods and obviously it is as mobile as the other trucks of the division since there has been no modification of chassis to construct this unit. One additional advantage which is of particular importance, considering its primary function, is the ease with which it can be kept clean as compared with the difficulty of performing good surgery in a tent.

This unit accompanied the 1st Armored Division during the Louisiana Maneuvers in September, I Armored Corps training at Camp Polk, Louisiana in September and First Army Maneuvers in the Carolinas in November returning to Fort Knox early in December, 1941. During this period the surgical unit was almost constantly in use, was moved many times and proved to be very satisfactory and practical for extended field service.

This is the first model and it is realized that improvements must be added. At the present time five more are being constructed for this division and some of our mistakes will be rectified. The water tanks are larger than we need and when full take up an undue amount of the available payload.

*Surgeon, 1st Armored Division.

1—Rear view of surgical truck (experimental) 47th Medical Battalion (Armored) in operation. 2—Side view of 2½-ton cargo truck loaded with 15 litter patients. 3—Surgical team in truck.

By extending the canvas to the rear in addition to the sides working in "blackout" will be facilitated and the operating personnel and patients will be protected from inclement weather at all times.

The addition of this unit to our medical battalion has not completely solved the problem of increasing the mobility of the clearing station. Tentage is difficult to hide, slow to establish and almost impossible to move on short notice. Our ward space should be on wheels also. This is not as difficult to accomplish as it would appear on first consideration. A small bus which would accommodate twelve litter cases with sufficient space to permit attendants to care for the patients could be installed on our present 2½-ton, 6 x 6 chassis. This would necessitate a special body but we would have the advantage of using a standard chassis and would present no additional spare parts problem within the division.

The Medical Department Equipment Laboratory at Carlisle Barracks is now studying the problem of production of the two vehicles discussed above and it is hoped that in the near future we will be able to give our clearing stations their needed mobility.

As an emergency expedient we have found that it is possible to move fifteen litter cases in the standard 2½-ton cargo truck utilizing only the standard litter. The litter slings are used to secure the litters in place with six resting on the braces of the bows, six on the seats and three on the floor of the truck body. This is not advocated as an ideal means of transporting patients but in an emergency it could be utilized if sufficient ambulances were not available.

Morale and Medical Aid

By Corporal Ray W. Smith, (Medical Detachment), 4th Cavalry

"The final word regarding victory and defeat is spoken, not by the arms and equipment, nor by the way in which they are used, nor even by the principles of strategy and tactics, but by the morale of the troops."—FOERTSCH: *The Art of Modern Warfare.*

THE medical field soldier attached to a reconnaissance cavalry regiment and thrown more upon his own resources as a result of the type of activity demanded from such an organization, is the subject of this brief article. The nature of his duty makes of him a potential morale factor. In the background are mental notes made during Medical Detachment, 4th Cavalry, participation in the Army and GHQ maneuvers in Louisiana.

The main task of a reconnaissance cavalry regiment is to get information about the enemy—his whereabouts, disposition, plans, and strength. The nature of the task calls for mobile action over a wide territory, and secrecy requires that reconnaissance missions be performed by small and often scattered units. In respects, this activity resembles that of the guerrilla. Confronted with actual casualties, the medical field soldier attached to a troop or unit engaged in reconnaissance, or on a mission of contact with, or delaying action against the enemy, could perform only bare emergency aid. Need to be where casualties would most probably occur would require him to keep up fairly well with his unit.

More and more the psychological factor, morale, is recognized as a valuable asset to the medical practitioner. Not in the "fake" sense, but as a legitimate and frequently vital auxiliary. And this is so, whether the practitioner be a regimental surgeon, or a troop aid man. The presence with field units of medical soldiers selected for their caliber as morale factors would provide a definite "lift," particularly to isolated units.

If stress is placed on this morale factor, it is because medical aid and its personnel have necessarily been shadowed by the innumerable other problems of military training, and because medical aid with a reconnaissance regiment, like the 4th Cavalry, is in experimental stages.

It does appear that more efficient and useful results from the presence of medical soldiers with field units may be obtained through taking a new, or perhaps, fuller view of such personnel. If the medical aid man is to perform adequately, his presence must induce the confidence of men about him.

Attainment of maximum usefulness from medical field soldiers is not great or difficult. Such personnel constitute a relatively small part of the organizations to which they are attached. It should be possible therefore to insure selection of men qualified to contribute to the confidence of their comrades, in turn insuring more timely and effective treatment of their illness or wounds, higher morale, and increased efficiency.

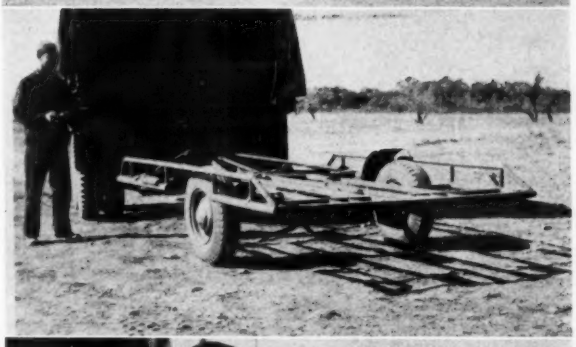
With all respect to the medical soldiers I have known, I believe that their importance from this standpoint has not been considered or utilized sufficiently. These are days of specialization in military life no less than in industrial, and a broader, fuller view of medical aid and equally broader, fuller view of training the medical soldier do appear desirable.

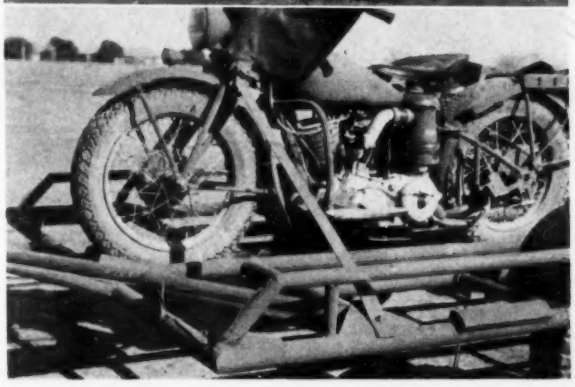
Isn't there still a tendency to undervalue medical personnel—their "potential" in the service? And may not this tendency be counter-acted healthily by action to select, train, and perhaps—yes—recognize and value the medical field soldier more highly in this fuller view?

One Purpose, One Mission

I am a soldier and I have spoken to you as one soldier to another. I have but one purpose, one mission, and that is to produce the most efficient Army in the world. Given the American type of soldier and our war industries operating at top speed; given your aggressive support on the home front, and it can be done, and it will be done in time.—GENERAL GEORGE C. MARSHALL, Speech at 1941 American Legion Convention.

MOTORCYCLE AMBULANCE*





DURING the Louisiana Maneuvers, 1941, a problem developed in the transporting of disabled motorcycles either from one bivouac to another or on the march. Having made brackets to fasten on the rear of Scout Cars to haul them, which proved unsatisfactory, a thought always lingered in our minds to find some means of hauling them with the least trouble. One day in October, 1941, in passing the Outside Salvage Storage in Camp Bowie, Texas, we saw an unattached front axle assembly for a 1931 Chevrolet by a pile of 1½" and 2" gas pipe. This gave us an idea, and in a short time we drew up the plans and gave them to Capt. John G. Bowes, Regimental Motor Officer. He secured permission from our Regimental Commander, at that time, Colonel Maxwell A. O'Brien, now Brigadier General O'Brien, to go ahead with our plans.

Having obtained the Commander's approval, a Requisition was submitted to the Salvage Officer for three hundred pounds of salvage 1½" and 2" pipe, one 1931 Chevrolet (Reversed Elliot Type) front axle assembly, two 7.00x15 wheels and tires, and a broken 1" driving axle.

Taking these materials to our shop, we stood three Indian Motorcycles up on their center stands in positions as shown in illustration. We layed 2" pipe in a rectangular shape around the motorcycles forming the frame. Then by marking the positions of the wheels, we placed pipe across and lengthwise, welding them together to obtain the strongest structure, using the least material and still maintaining the runways for the wheels.

Electric welding is used on the entire vehicle.

After completing the frame, we cut the axle in two and placed two pieces of 1½" pipe, one on each side, and welded them and the axle together lengthening the complete axle ten inches. Then we turned the complete axle assembly over to obtain a higher road clearance for axle and body. We then removed the tie rod and steering knuckle arms and after giving the wheels one degree Camber with 1/16" toe in and Zero Caster we welded a ½" iron block in the yoke making it stationary to the axle. We then welded the frame to the axle solidly as shown.

To form our hitch, we blocked the frame up behind a GMC 6x6 and placed two pipes from the corners as shown to the center of pull and welded them together at both ends, then added three shorter pipes between them to give more strength and pull-ability. We then cut a piece of ¼" metal to form under the outside pipe

*Designed and built by Pvt. 2d Class Specialist J. E. Meyers and Pvt. 2d Class Specialist W. E. Sprott Service Troop—113th Cavalry (H-Mecz) Regimental Motor Maintenance Platoon.

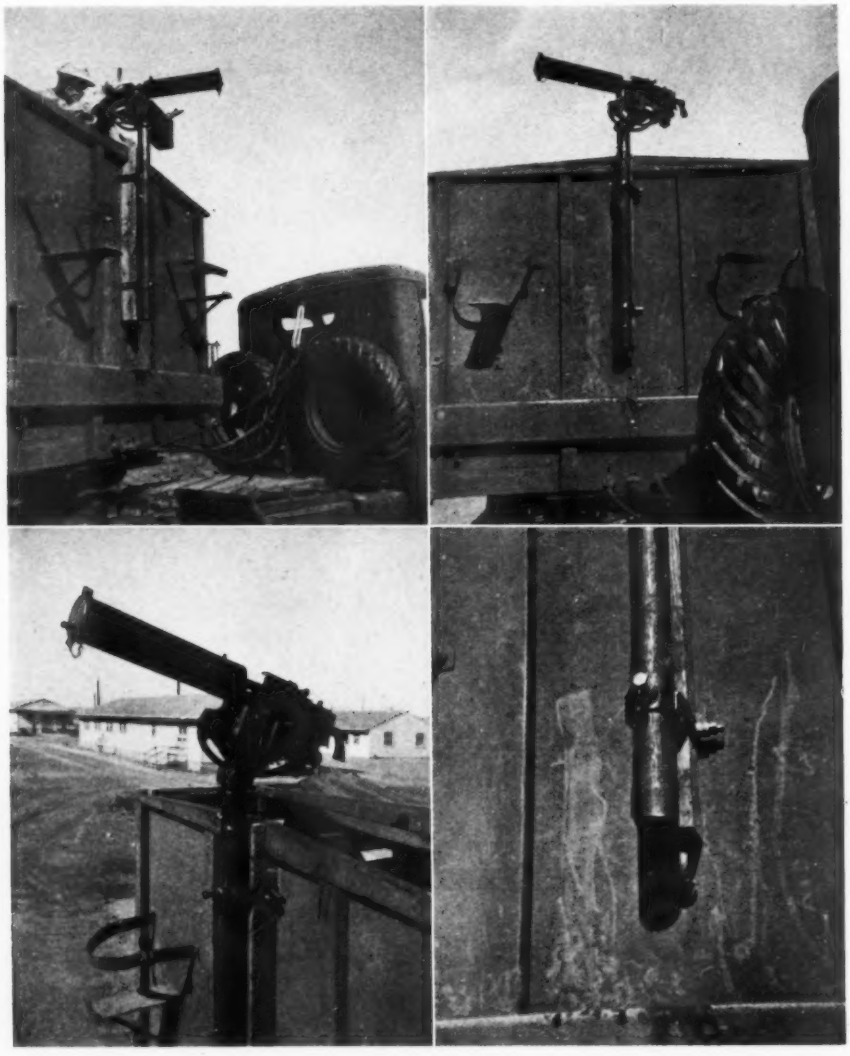
NOTE: Specifications and drawings will be furnished upon request to C. O. 113th Cavalry.

of the hitch and the top of the front pipe of the frame and welded it securely to both for added strength. From the old axle, we heated and formed an eye at one end of it three inches inside diameter, and placed the straight end of it in the center pipe and welded it to five pipes at their intersection making a very substantial hitch.

By using three old channel-iron bumpers, we made the runways and base for the wheels and welded them to the frame. To give more strength and added appearance, we took two pieces of 1½" pipe and welded them Bridge Span Style from front to rear above the outside rail. The lights were made by welding a clearance light at each rear corner and running the wiring inside the frame to the front of the vehicle, giving good protection to the wiring.

This entire trailer has a total weight of not more than 350 pounds empty, and not more than 1900 pounds fully loaded, and can be towed behind any Government Vehicle of ½ Ton Capacity on up with very little effort. It is designed so as to carry one, two, or three motorcycles and still maintain the load distribution, balance, and weight on the hitch.

NOTE: This organization has towed this vehicle approximately 3,000 miles under ⅔ or full load with not so much trouble as a flat tire.



MACHINE GUN MOUNT FOR PORTÉE TRAILER (EXPERIMENTAL)
113th CAVALRY

It consists of an iron pipe attached to a four-by-four which in turn is attached to the front end of the trailer. This pipe encloses a smaller pipe which makes the height adjustable and has a collar on top to fit the pintle. This gun has a 360° traverse, but in order to fire to the rear, would require two men to manipulate the gun, one man standing or sitting outside the trailer and the other man in the trailer. Numerous locations for the machine gun were tried, but none of them were as satisfactory as this one.

Blitz Maintenance

*By Captain Caesar F. Fiore, Cavalry**

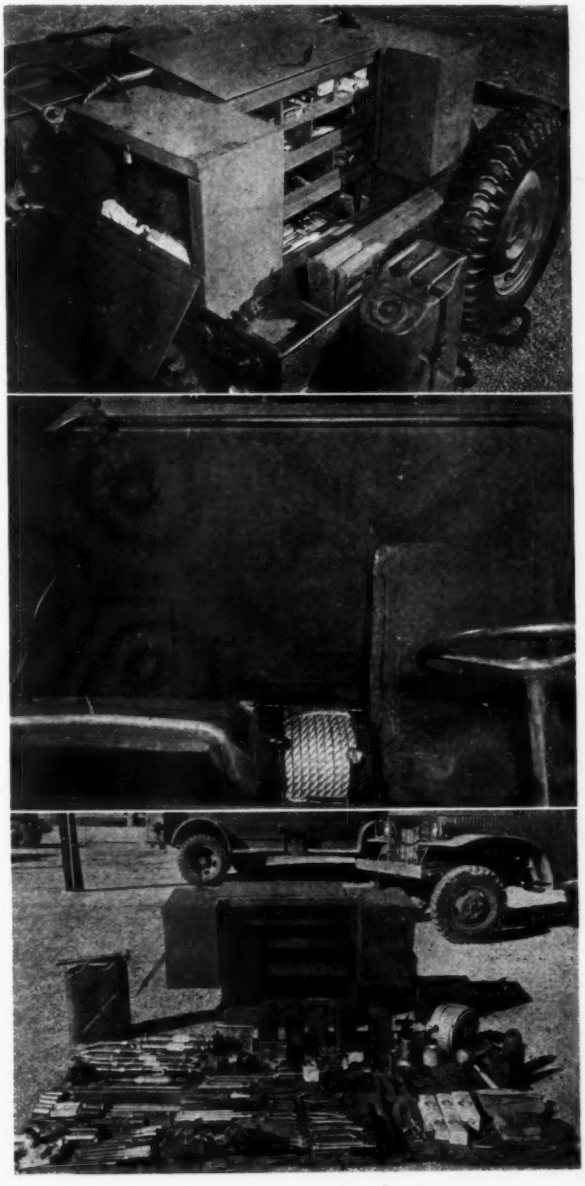
KEEP 'EM ROLLING, has been adopted by motorized and mechanized units of our armed forces as their slogan after the National Slogan "Keep 'Em Flying." In order to keep them rolling, particularly in combat and during front-line operations, we of the *reconnaissance* elements must learn new and better methods of maintenance, in the realization that our present plan of action is too outmoded and much too slow to produce effective results at a time when speed is of the greatest importance.

Maintenance problems in reconnaissance units are in no respect comparable to the problems of other motor units. For example, the present conception of motor maintenance assumes that a disabled vehicle merely pulls over to the side of the road and awaits the arrival of the unit maintenance truck. If the unit maintenance section is unable to correct the failure, they move on and leave the disabled vehicle for third echelon maintenance units to come by. This method pre-supposes a definite road of march and vehicles must maintain this road of march in order to receive the advantages of maintenance. Stray vehicles can of course receive aid even if off the beaten path but at best the system is slow and sadly inadequate for reconnaissance warfare.

For reconnaissance elements field maintenance presents a problem in itself. The normal action of a reconnaissance troop necessitates the coverage of an extensive area and as often as not the vehicles are widely separated. A reconnaissance unit to be effective *can not* be confined to one road but must operate on several and in order to fully accomplish the mission of reconnaissance it is frequently necessary to dispense entirely with roads and drive cross country.

It is for this reason that the present system of field maintenance must be altered for reconnaissance units. It is neither logical nor practical that a 2½-ton truck with boom and winch should go forward to make necessary repairs and replacements in the face of enemy action. The 2½-ton truck is too heavy and cumbersome for cross-country driving especially with the enemy in close proximity. Under fire the 2½-ton truck offers an excellent and costly target. Lack of speed, armor protection and maneuverability offers little chance of escape to the vehicle or its occupants in case of sudden attack. Furthermore the loss of the 2½-ton truck means the loss of priceless equipment and spare parts—enough for the entire troop.

The answer then, lies in that handy little vehicle which has thus far found so many other uses in our army—the *Peep* or as some folks would have it the *Jeep*. In any event the ¼-ton 4 x 4 is the answer to the mechanics prayer. In the accompanying photographs I have tried to show how we have equipped the "Blitz Buggy" with cabinet and a fair supply of tools and spare parts. The result is "Blitz Maintenance." The principle of using small fast maintenance vehicles in the field is not a new one. Recent G-2 reports accredited German successes in Blitz Warfare to their superior system of motor maintenance, particularly in combat. In short their system is *aggressive* where ours is *passive*. By learning some of the secrets of "Aggressive Main-



*Commanding, 92d Reconnaissance Squadron.

tenance" we will gain greater effectiveness and increased efficiency for our reconnaissance units in action.

Instead of the 2½-ton truck being used as the maintenance truck we consider it as a supply truck to carry spare parts and sub-assemblies. In addition, the supply truck can serve as a wrecker, car shop and general refueling station. The maintenance vehicle instead of being the 2½-ton truck is the ¼-ton 4 x 4 outfitted and equipped to do first, second and limited third echelon repairs on any vehicle in the organization. The small, sturdy and highly manuverable vehicle outfitted and equipped with cabinet and tools as shown in the accompanying photographs can do almost all of the work that has been done by the 2½-ton truck. The limit of effectiveness is not dependent upon the size of the maintenance vehicle but rather by the nature of the repair and the availability of replacement parts.

A troop maintenance section could well be set up as follows:

a. One 2½-ton truck, with boom and winch, well stocked with replacement parts. This truck does rear line maintenance and towing only. It serves as a mother vehicle to carry the supplies that the smaller ¼-ton trucks will need for the actual front-line maintenance.

b. Two or perhaps three ¼-ton 4 x 4 trucks outfitted with equipment as shown in accompanying photographs.

c. A combat vehicle, either scout car or tank, equipped with radio to receive calls from disabled vehicles. This vehicle will also serve to protect the maintenance section against local attacks.

To give an example of how this arrangement works let us assume that a reconnaissance troop is on a mission well forward of other divisional units and in the vicinity of enemy forces. The third platoon covering the right sector has a failure in one of its vehicles, let us say a burned out coil. By pre-arranged code symbols the third platoon commander radios troop headquarters "one scout car disabled," giving the nature of the trouble and the location of the vehicle. In most cases the maintenance section radio will pick up the message direct. But in the case they do not, Troop Headquarters will send them the message. Immediately one of the Maintenance Peeps gathers the required replacement parts and races off to the scene. Using its high road and cross-country mobility, it covers the distance rapidly. If the damaged Scout Car is so situated as to cause difficulty in location, guides are sent out from the disabled vehicle to assist the Peep in arriving at its destination. Once the Peep has arrived at the scene, it is only a matter of moments until the damaged combat vehicle is repaired and has again taken its proper place in action. The Peep returns to the maintenance section and awaits new missions.

In this manner the great majority of motor failures can be reduced in the minimum of time and without unnecessarily exposing more expensive equipment. It can be readily seen that the result will be increased speed in reconnaissance; and where time is the watchword "Blitz Maintenance" must be exploited to the fullest degree.

The cabinet itself is very easily constructed of white pine and waterproof plywood. The cabinet fits very snugly into the ¼-ton 4 x 4 and one feature which is of particular note is that the cabinet can be removed by merely lifting it from its place in the vehicle. The only alteration necessary to the Peep is the removal of two brackets holding the top brace. These brackets are then attached to the top of the cabinet and the brace for the canvas top is then carried in the position shown in photograph No. 2. (Previous page.)

In photograph No. 3 a display of all tools and equipment carried in the cabinet is shown. It is not necessary to list here all the parts and tools shown. The weight of the cabinet and all items shown complete is approximately 320 pounds. This is not an excessive load for the ¼-ton 4 x 4 vehicle.

The framework of the cabinet is made of 2 x 2 white pine with metal L braces at critical points. The covering throughout including the slide door in the face of the cabinet is made of ¼-inch waterproof plywood. Small hinges, hasps and locks are easily available; the entire cabinet can be constructed at a cost of approximately $15.00. NOTE: Detailed specifications and drawings will be supplied upon request to C.O., 92d Reconnaissance Squadron, Camp Funston, Kansas.

Experience

I believe that five hundred new men added to an old and experienced regiment were more valuable than a thousand men in the form of a new regiment, for the former, by association with good experienced captains, lieutenants, and noncommissioned officers, soon became veterans, whereas the latter were generally unavailable for a year.—From *Memoirs,* by GENERAL W. T. SHERMAN.

Demonstration Hall, the home of the Military Department at Michigan State College. (Building on left of flag pole.) Building at right is the new Jenison Field House.

The Cavalry Unit at Michigan State College

By Lieutenant Colonel Morris H. Marcus, Cavalry

EDITOR'S NOTE: In subsequent issues of The CAVALRY JOURNAL, similar descriptive articles about all of the other Cavalry R.O.T.C. units will be published.

* * *

THE problems of all R.O.T.C. units differ according to school policies and geographical location. The War Department prescribes a program of general instruction to be followed and recommends the arrangement of courses so that a proper balance between theoretical and practical instruction may be obtained. Climatic conditions and college facilities in the various sections of the country regulate the arrangement of this program.

To illustrate in three different sections of the country —students at Texas A. & M. College are able to have outdoor practical instruction throughout the entire year; the University of Illinois has a tremendously large armory within which all dismounted units may drill throughout the winter, but they have no riding hall available to the Cavalry unit; at Michigan State College we have no armory suitable for dismounted drills, but we do have a riding hall in which mounted instruction may be carried on throughout the year. Weather conditions prohibit outdoor drill from October to April.

NORMAL TRAINING SCHEDULE. Let us now follow through in a brief way the course of instruction followed by a Cavalry student. The Cavalry Unit consists of 75 Advanced Course students and 350 Basic students. The school year is divided into three terms. Michigan State College freshmen (Cavalry Unit) are first given a course in military courtesy and discipline after which they are immediately started on dismounted drill which lasts throughout the fall term until weather conditions prohibit outdoor work. During the winter term when no outdoor instruction can be given, they are instructed in rifle marksmanship and horsemanship; rifle marksmanship being conducted on an indoor range with facilities for thirty students. In the spring term, as soon as weather permits, mounted drill is commenced. This includes at least one mounted parade for every freshman student during the spring term. Dismounted drill is, of course, conducted concurrently. Other subjects required to be taught to freshmen are so placed as to fit into this schedule.

The student continues his training as a sophomore in the fall term of his second year with mounted drill and in the spring term with both mounted and dismounted drill and combat exercises. The winter term of the sophomore year is devoted to the theoretical study of weapons, technique of rifle fire, combat principles, and other subjects.

Advanced Course students are selected from those sophomores whose records show outstanding work scholastically both in the Military Department and in other Departments of the College and who have demonstrated qualities of leadership throughout their basic training. In order to make the course as practical as possible for Advanced Course students, all juniors and seniors are detailed as instructors of the Basic students in close and extended order drills and combat exercises during the fall and spring terms, always, of course, under the supervision of a commissioned officer. Our Corps Organization calls for the appointment of senior students as officers and juniors as non-commissioned officers. Classes are so arranged that either a junior class or a senior class meets at the same time as a freshman or sophomore drill class in order that these Advanced Course students will be available to act as instructors. During the first week of each fall term, while the freshmen are being given military courtesy and discipline, both the junior and senior classes are given a course in Methods of Instruction, both theoretical and practical, in order better to prepare them for carrying on this type of work during the balance of the term. In this way full advantage has been taken in the past of every opportunity to give these students a maximum of mounted training and

Top: **Students test their strength.** ***Center:*** **Animal management in bivouac, Fort Custer R.O.T.C. Camp.** ***Bottom:*** **Cavalry students from the University of Illinois, Culver Military Academy, and Michigan State College join forces at the Fort Custer R.O.T.C. Camp.**

practical instruction throughout the year. Other required theoretical subjects are taught insofar as possible during the winter term.

STUDENT HORSEMANSHIP ACTIVITIES. Michigan State College is essentially an agricultural college. It renders a great service to the farm people of the state of Michigan through its extension courses, radio programs, and special Farmers' Conventions. Horsemanship has therefore always been a strong factor in maintaining the R.O.T.C. in the spotlight. Due to the limited hours allotted for instruction in equitation, students are encouraged to ride on their own time. Basic students are allowed riding passes as soon as they complete their freshman course, and a great many of them take advantage of this opportunity to ride on Saturday afternoons and Sundays. Bridle paths are now being constructed to encourage this activity still more. During inclement weather the riding hall is opened for their use.

From the above schedule one can readily see that the riding hall of Michigan State College is a very busy place. In fact, from 8:00 o'clock in the morning until 6:00 PM, during inclement weather, there is not one hour free except that between 12:00 Noon and 1:00 PM. (Artillery classes also use the riding hall for Gun Drill.) Our horses are worked from three to five hours every day. We have a remarkably good group of horses, and they are all in fine shape.

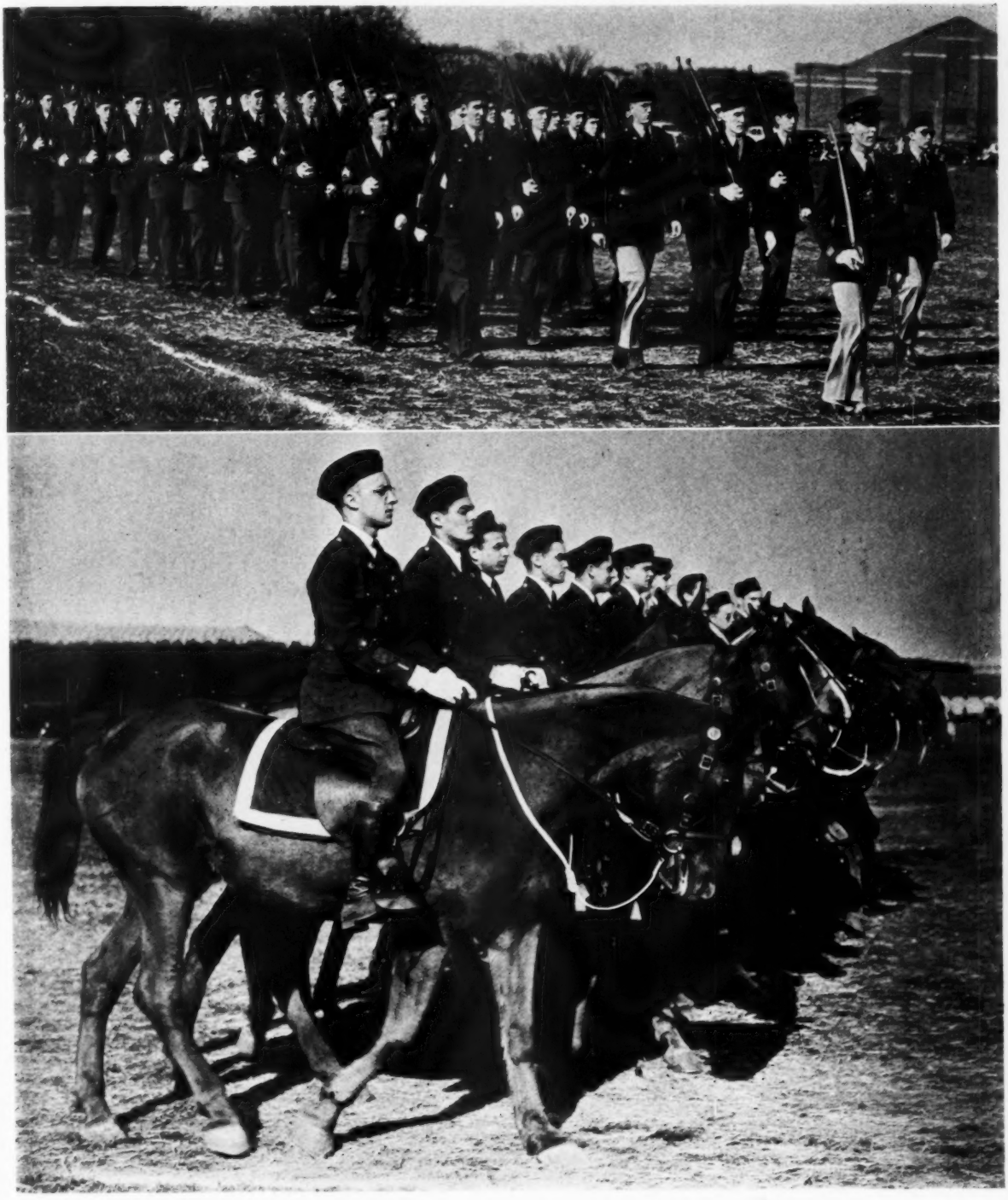
NEW POLICIES: A short while ago a directive was received that every effort would be made to make our course of instruction a practical one. In view of the above schedule and the fact that our course was already quite practical, how could we change this to give our students more practice? The following items have been instigated and may be of interest to others:

On Thursday, December 4, 1941, the entire senior class of Cavalry students was taken to a nearby city where it watched the assembling of the medium tank from the ground up. Major John G. Hritz, Executive Officer, personally conducted the class and afforded them ample opportunity to ask questions. From here they went to another plant and watched the assembling of the large 2,000 h.p. airplane motors. On the way home they visited an airplane factory. It is hoped that similar tours may be organized and conducted through defense plants now being constructed.

Our history course this year was re-arranged so that it might be conducted by the students themselves. Each student was assigned a subject, required to write a monograph, and deliver his lecture to the class. The students were enthusiastic about this method of conducting the course, and received a great deal of practical value from it. So enthusiastic were they that some of them have even asked if the entire balance of the year could not be conducted in the same manner. This, of course, would not be practicable, but other methods of giving them "practice teaching" have been set up.

Senior students will be detailed to conduct the instruction in rifle marksmanship and in freshman equitation under the supervision of the regular instructor. Inasmuch as their classes do not occur at the same time during the winter term, this must be conducted on a voluntary basis. So far, there is no lack of volunteers.

CONCLUSION. The foregoing is a very brief resumé of the activities which are carried on by the Cavalry



Top: **A Pershing Rifles unit contains cadets from all branches.**
Bottom: **Freshmen and Sophomore Cavalry students on parade.**

Unit at Michigan State College throughout the year. Everyone here is coöperating to take advantage of every opportunity which presents itself for improving the training of the R.O.T.C. student. The resulting product may not be an exemplary example of a perfectly drilled individual, but he certainly is a Reserve officer of high quality, capable of making his way in the service and of leading a platoon efficiently. Reports indicate that Michigan State College graduates already on active duty have not only made a favorable impression upon the service as a whole, but have brought honor and distinction to their *Alma Mater*.

R. O. T. C., New Mexico Military Institute*

By a Cadet

IN the present day expansion of the Armed forces, our New Mexico Military Institute is playing a significant rôle in supplying Cavalry branches with capable young officers. Being one of seven Senior R.O.T.C. Cavalry Units we are naturally proud of the records our graduates are making. This may sound boastful but I think it is warranted in the fact that one of the primary objects for which the school strives is—to build justified confidence. After four years of intense training in leadership, horsemanship, map reading, scouting and patrolling, and basic combat principles; the graduate is prepared for his first assignment with a working knowledge of the elementary principles of Cavalry Combat and imbued with a spirit of coöperation in the combat "team."

Our system is based upon three main objectives, namely: Leadership, horsemanship, and combat principles.

(1) Leadership, the first of these objectives for we have realized for a long time that nine-tenths of the successful tactics for small units is found in the quality of personal leadership. For this we have here a small scale, model of a regular army regiment. A typical cadet will experience the four natural grades, including the private, corporal, sergeant and officer; and will acquire a first hand knowledge of each. A platoon or troop commander learns by actual experience how to instill in his unit an appreciation for coöperation in coping with any situation that may arise. In brief the objective is a team with a leader.

(2) Next on our list is horsemanship; we know that our value as Cavalry Officers will depend primarily upon our interest in, knowledge of, and ability to instruct subordinates in the distinguishing characteristic of our service. Just as a tank is to a tank-commander; a horse is to the Cavalryman. In the course of our training we learn how to ride, care for, and condition any type of horse that may be assigned us. There are some cadets here who on nearby ranches have lived in a saddle all their lives and also some who have never seen a horse before. No matter which, they all get the same instruction in military horsemanship, care of animals and stable management. A cadet is given the opportunity to become as proficient in this art as he wishes. Aside from the regular cavalry drills we have a first class jumping team, a renowned polo team, and special periods for those interested which we call "privilege riding." In all four grades of tactics, under expert tutelage, we have required equitation classes twice a week during the warmer months. These all speak for themselves, I think, in that we have had no unfavorable reports on the riding ability of any of our graduates.

(3) For field operations our training has been specialized under map reading, scouting and patrolling, and basic principles of combat. Of course we have theoretical class room work in all these, but they are not valued half so highly as the practical experience we receive in actual problems. We plan to have three day marches in which a leader will have to be able to read a map or else. . . . In problems of scouting and patrolling the corporal or lieutenant now affects every principle he has learned in reconnaissance, cover and concealment adhering to and performing his mission, etc. Combat

*Lt. Colonel E. G. Cullum, Cavalry, P. M. S. & T.

principles involve the greatest range of practical activities, for daily we have problems in mounted and dismounted combat or a combination including offensive, defensive, security, outpost and machine gun. On Saturday mornings we have mounted and dismounted problems of a broader scope, the actions being either advance guard, rear guard or individual patrols. These require the leader to be on the alert all the time, to give his orders, to know the limitations and capabilities of his assigned arms, in making his estimate of the situation and type of action he will employ. The majority of our leaders, with practice, are performing their jobs in a manner that would make any unit respect and follow them anywhere.

Of course we do not have the time nor the special mechanized arms and equipment to place ourselves on a level with a regular army unit. But we do utilize the time we have to the greatest possible extent and study the basic principles of each individual weapon and motorized unit.

The general attitude of the cadets toward this training is one of earnestness and appreciation, for we realize that before many months have passed we shall be applying these principles on a much graver scale. It is our desire to acquire a first-hand knowledge of the Cavalry and supporting weapons, maintaining always a deep respect and appreciation for the other branches of the armed forces.

He that can enjoy the intimacy of the great and on no occasion disgust them by familiarity or disgrace himself by servility, proves that he is as perfect a gentleman by nature as his companions are by rank.—*Colton.*

Oklahoma Military Academy

Cavalry Unit

By Lieutenant Cullus M. Mayes, Cavalry

I

THE Oklahoma Military Academy, owned by the State of Oklahoma, is an essentially military Institution. The college section embraces the first two years of college, while the high school section includes the last three years of high school. Only excellent high school sophomores are admitted. It has a classification of M-I by the War Department. It was established by an act of the State Legislature in 1919 and although a military school, had no War Department Unit until 1924 when the usual Junior Unit was established. This continued until 1930, when its status was changed to Senior and a Cavalry branch was established. Both Cavalry and Infantry were carried concurrently until 1934, when the Infantry Unit was abolished for lack of students. Its "Honor School" rating was first given in 1932 and has been maintained without interruption.

Thus the growth has been progressive throughout. The present Unit consists of three Officers, twenty-one enlisted men and ninety-five horses, with the full equipment necessary for training. As an essentially military school, it is conducted as much as possible along the lines of the United States Military Academy. All cadets must be members of the R.O.T.C., under military control and discipline at all times.

The type of cadet is excellent Cavalry material, both mentally and physically. Both the tradition of the country and the temperament of its people are those of horsemen. At the average age of eighteen the normal height is 5′ 10″ and the weight is 154 pounds. As a majority of the cadets are well accustomed to horses and have ridden the greater part of their lives, the usual problems of this automotive age have been solved before the cadet arrives. This allows more time for the novice minority and insures rapid progress with the majority who are thoroughly accustomed to horses.

II

The Academy is located in northeastern Oklahoma, about one mile west of the city of Claremore and is adjacent to the Will Rogers Memorial. The Campus occupies a plateau about one hundred feet above the valley of the Verdigris river and 630 feet above sea level. Extending west from the campus proper, on which the buildings are located, is a reservation of approximately 260 acres of rolling country interspersed with woods. It is well adapted to "Russian rides" and possesses many natural obstacles. These features of the ground enable the cadets to be conveniently and thoroughly trained in cross country riding as well as Cavalry combat. There is an excellent level mounted drill field opposite the stables which is used as a practice polo field and an outdoor riding hall for equitation. The parade ground and drill field are adjacent to the buildings as are several dismounted drill fields.

This country is excellent from a climatic and topographical point of view. The winters are open and rain seldom interferes with the training program. Hard surfaced roads are supplemented by numerous dirt roads which facilitate marches and problems off the reservation. The numerous hills afford excellent observation and the varied terrain concealment of troops by an alert commander, with the Verdigris River and its tributary streams which present natural obstacles which must be overcome.

The country around Claremore is farming and range land, and the inhabitants very coöperative with any phase of military training.

III

The Academy was planned with a view to its gradual expansion. As a result of this far sighted policy all buildings are convenient to each other and all can accomodate twice the number of cadets that the present two sets of barracks allow (three hundred). Buildings are of brick fireproof construction, are modern in every detail, and are heated with steam. Those which are used by cadets will be briefly described:

The Academic Building. The Original building of the Academy. Contains the Administrative offices, library (lighted by fluorescent light and containing 5,000 volumes), laboritories and seventeen classrooms.

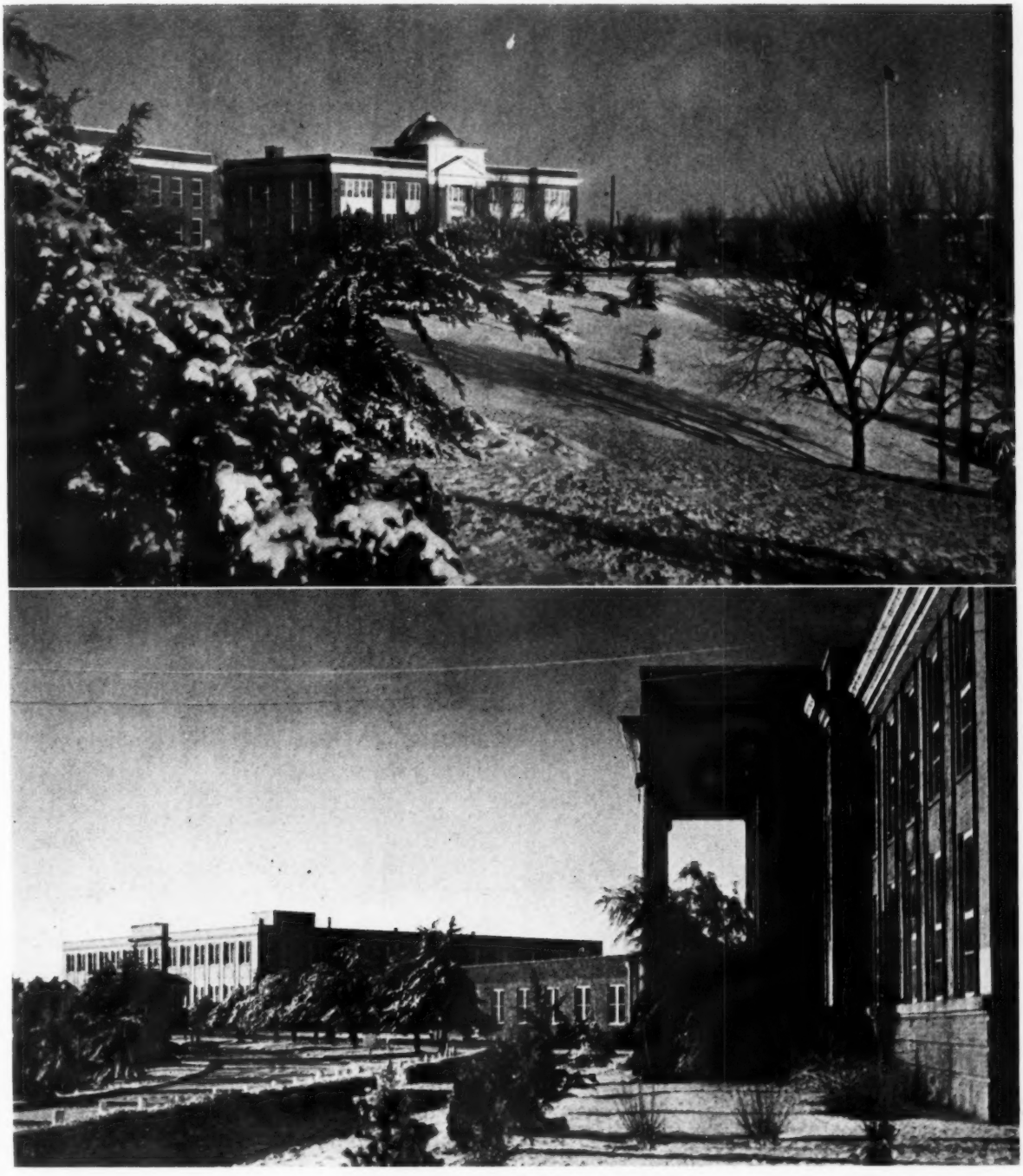
The Meyer Barracks. Built in 1930. Houses the second Squadron—two cadets to each room, one troop to a floor. Indoor troop instruction can be given in each troop area.

The Markham Barracks. Built in 1927. The Cadet Staff and First Squadron are quartered here, one troop to each floor. The original gymnasium in the basement is now used as a secondary intramural area in bad weather.

The Mess Hall. Built in 1924, between the two barracks. Dining room, kitchen, storerooms and a pastry kitchen are all on one floor.

The Auditorium. Built in 1936, has a seating capacity of nine hundred, also contains the Commandant's office and reception lobby on main floor. The Post Exchange, recreation rooms, barber shop and band room are in the basement.

The Field House. Built in 1936, an unusual building. The northern section contains the P.M.S.&T.'s offices, three large, well lighted classrooms, the Armory



OKLAHOMA MILITARY ACADEMY.
Top: **Administration Building from South Barracks.** ***Bottom:*** **North and South Barracks. Building between is mess hall.**

and storerooms. It consists of two stories and a basement and is used for no purpose other than Military. The central section is the gymnasium, 110 x 70, with the athletic equipment rooms. In inclement weather, indoor instruction, including dismounted drill, is given here as rifles and equipment do not have to be taken out of the building. The south section is 27 x 74 swimming pool with showers, lockers and dressing rooms at its east end.

The Stables. Built in 1930, are of brick with concrete standings. Quarters for the unmarried men of the detachment, saddler's shop, saddle room and grain room

are in the stables proper. The forage shed and shoeing shop are conveniently nearby, but sufficiently distant so that no fire hazard will be created.

There is also an excellent indoor heated rifle range that can be used the entire year for rifle marksmanship, musketry and other training of that nature.

The Infirmary. Built in 1927, is a modern, two-story building completely equipped for all normal medical needs. It houses the medical staff and accomodates eighteen bed patients in its eleven rooms.

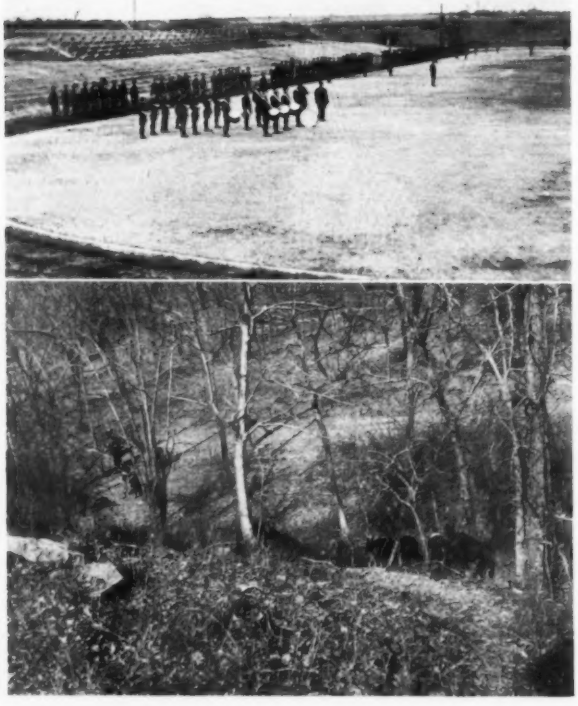
The President, Commandant, P.M.S. & T. and three senior faculty members have quarters on the campus.

The Athletic Field, constructed in 1937, has subsurface drainage and is used for ceremonies and training when ground conditions are not favorable elsewhere.

IV

The academic objectives of the Oklahoma Military Academy are:

1. To give the student of junior college status a sound and thorough education corresponding to the first two years of a four year college course. He will pursue the proper curriculum to enter the third year of college as well or better grounded than in the first two years of a senior college. Should he take a terminal course here, he will have the proper groundwork for an entry into the business world.



Terrain is well suited to Cavalry instruction.

2. To correct, by remedial courses, those deficiencies usually found in the student's basic education and to offer essential courses absent from the curriculum of the smaller schools. It is often necessary to completely rehabilitate the student who has been allowed to avoid the mathematical and scientific subjects and who finds later that he wishes to pursue a course requiring these subjects.

3. To give the student of high school status a thorough basic education and to guide him toward a profession to which he is adapted. Great care is exercised that a balanced proportion of Arts and Sciences are taught so that the student will be properly prepared for college or to enter business at the termination of high school.

The President, Captain John C. Hamilton, USA, Retired, is a graduate of the United States Military Academy, class of 1918, and spent his entire seventeen years of service in the Cavalry, both horse and mechanized. He was an instructor at West Point from 1924 to 1928 and has a thorough knowledge of deficiencies usually found in first year cadets. The courses and methods of instruction are patterned along the same lines and, in some cases, are identical with those of the U.S.M.A.

Accuracy and thoroughness are demanded in all academic work. Methods of study are taught. The system is an immense aid in teaching courses in Military as the need for exactitude is impressed on the cadet in every phase of his endeavor and his life here.

The result of misplacing a decimal point or writing an ambiguous or involved paragraph is kept before the cadet at all times and is translated into possible loss of life or battle. From an engineering or military point of view, method without accuracy is worse than ignorance.

Almost all courses found in the first two years of West Point are carried here, as well as some of the third year courses.

The curriculum was completely revised and modernized in 1934. Courses of doubtful value were eliminated and those of mathematical and scientific application to the present world conditions were added. The Academy is a member of the North Central Association of Colleges and Secondary Schools and cadets are admitted to West Point and Annapolis with a physical examination only.

V

Physical Development and Training.

All Senior R.O.T.C. cadets should be organically sound, irrespective of whether they be Basic or Advanced. If this is not required, a large number of rejections will take place when the physical examinations for the Advanced Course are held at the beginning of the third year. Also, throughout the entire four years, the Institution's loss through illness will be kept at a minimum.

Beginning this year, cadets were examined thoroughly and any who were not fairly certain of being

suitable Advanced material were rejected. This should reduce waste to a minimum and a small fraction of what it has been in previous years, as well as facilitate training.

Due to the automobile it has long been realized by the War Department that the physical quality of our manpower was on a rapid decline and the present emergency has amply proven their fears. Although a large proportion of the cadets are excellently developed when they are admitted, a progressive physical development schedule is carried out during the entire time the cadet is here.

New cadets enter one week before the Corps returns. During this time they are trained by a selected detail of Military III's and IV's under the supervision of the Commandant's Department and Director of Athletics. This is a period of organization and hardening the new cadets. During the first month the Corps is progressively hardened so that by October first the entire academic, military and physical program can be carried without undue strain.

Physical development activities may be divided into five groups:

1. Corrective work under the Athletic Director. Here the cadets who have shown deficiencies in the physical examination (such as posture, lack of chest expansion, lack of development in any member) are given specific exercises under his supervision.

2. The new cadet system forbids hazing and is taken directly from West Point. New cadets are required to double time and "brace" for cadet officers and non-commissioned officers only, and maintain a correct posture at all times.

3. Intramural athletics, a normal formation for one hour each afternoon, are required of all cadets not on a Varsity squad. Rotation is required so that all cadets will learn each of the more common sports.

4. Varsity athletics are restricted to cadets who are proficient in both academic work and conduct. Sports include polo, football, basketball, boxing, tennis, baseball and wrestling.

5. Free time. In such free time as he has, cadets utilize the facilities for privilege riding, swimming, tennis and golf.

VI

Military. The Commandant's and P.M.S. & T.'s Departments are maintained separately but are thoroughly coördinated. A member of the latter is Commandant, thus uniting these two essential functions as both are so closely related in their objectives; i.e. to turn out the best officers possible.

Due to the essentially military nature of the Academy, the P.M.S.&T. receives far more hours than is required by regulations. The Basics have a minimum of seven hours per week on school days, and the Advanced nine. With four hours Saturday morning for field training, the totals are eleven and thirteen respectively, exclusive of field inspections, parades and ceremonies.

Showing type of cadets.

As the curriculum for Senior R.O.T.C. Cavalry Units is prescribed by the War Department and is well known to all Cavalry Officers, no attempt will be made to cover it. Only salient points of the training here will be considered.

The Saturday morning field training period is from eight until noon. This was instituted in January and will be continued in next year's schedule. The advantage of having a continuous four hour training period needs no explanation. All of us have sensed the futility of starting an exercise in the usual hour period and finding that we have to neglect proper emphasis on details so that the class may be brought in at the proper time. Even here, where the field area adjoins the stables, the normal period was just insufficient. This Saturday morning period may be divided into three one hour and twenty minute periods, two two-hour periods or one for the entire morning.

Field inspection is at 1:30 PM Saturday, Barracks inspection at 9:00 AM Sunday morning and parade at 4:00 Sunday afternoon. These last two formations are conducted by the Commandant's Department.

As training films take about thirty minutes, these are shown in the Auditorium between the supper and evening call to quarters. This allows the P.M.S.&T. to utilize the 11:30 AM—12:30 PM week day period in full.

This section of Oklahoma has open winters and very

few days are lost from inclement weather. However, the installations here allow indoor training in almost every phase except riding.

The Indoor Range, 80 x 32, is used during the entire year for marksmanship, musketry and competative rifle shooting. Rifle marksmanship is one of the most popular activities in this section of the country and the Academy won the Senior R.O.T.C. championship of the Eighth Corps Area in 1941.

Calesthentics are under the Director of Athletics, but Advanced students are trained by him to give these exercises. Gymnasium formations are made by troop or squadron under their own officers.

As the number of inclement days is fairly constant from year to year and the hours allowed by the Academy far above normal, a little planning insures full utilization of bad weather. Lectures, stable management and technical work can be taught at such times to allow the fullest amount of field training, riding and outdoor work during the long periods of favorable weather.

Summary

The advantages the R.O.T.C. enjoys at the Oklahoma Military Academy are:

1. Full coöperation from the authorities with complete understanding of the P.M.S.&T.'s problems.

2. Complete integration with the Institutional plan. The Military Department operates as an Academic Department and the P.M.S.&T. sits as a member of the Academic board.

3. The curriculum, teaching methods and standards are conducive to the making of an excellent officer.

4. Integration of the Commandant's and Military Departments assure excellent discipline and training in handling men.

5. Climatic and topographical conditions lend themselves to maximum outdoor training.

6. Installations are more than ample for all purposes.

7. The Academy authorities are as anxious as the Military that the best possible officers are graduated.

100% Officer Membership in the U. S. Cavalry Association

2d Cav. Div. Hq., Maj. Gen. John Millikin, Comdg.
2d Cav. Brig. Hq., Brig. Gen. Chas. H. Gerhardt, Comdg.
92d Rcn. Sq., Capt. Caesar F. Fiore, Comdg.
8th Cav., Col. Chas. S. Kilburn, Comdg.
1st Cav. Tr. (Rcn.) (Sep.), Capt. W. V. Martz, Comdg.
1st Rcn. Tr., Capt. Russel D. V. Janzan, Cmdg.
2d Rcn. Tr., Capt. Anthony F. Kleitz, Comdg.

98% Officer Membership

1st Cav. Div. Hq.	7th Cav.
1st Cav. Brig. Hq.	9th Cav.
3d Cav. Brig. Hq.	102d Cav. (H-Mecz)
4th Cav. Brig. Hq.	104th Cav. (H-Mecz)
691st Tank Destroyer Bn.	106th Cav. (H-Mecz)
3d Rcn. Tr.	107th Cav. (H-Mecz)
3d Cav.	12th Cav.
4th Cav. (H-Mecz)	112th Cav.

Directions for Modification McClellan Hooded Stirrups

1—Remove hood from stirrup by punching out all rivets.

2—Reduce the width of the bottom of the stirrup from 4½ to 3 inches by sawing off the tapered portion of the front of the stirrup, as follows:

a—Mark a line on the bottom of the stirrup 3 inches from and parallel to the back edge of the stirrup.

b—Continue this line up on the sides of the stirrup, intersecting a point approximately 1/16" from the edge of the cresent washer located near the top of stirrup.

c—Cut off excess portion using line as a guide.

d—Round all edges on front of stirrup with a wood file similar to the edges on back of stirrup.

Nothing is more important in war than unity in command.—*Napoleon*

Horse Feathers

Thumbs Down!!
Japs—Germs—Its

TROOPER I: "Jane's a nicely reared girl, isn't she?"
TROOPER II: "That ain't hay—and not so bad from the front either!"

A pedestrian is a father with a son home on furlo'.

"If brevity is the soul of wit, my gal's skirt sure is a wow. She looks like she was poured in it and forgot to say 'when'—and it's one joke I can see through."

PROUD MOTHER: "My Elmer joined the cavalry only two months ago and already is a four letter man—AWOL. Isn't that grand?"

TROOPER: "Do you shrink from kissing?"
WHOOPER: "No, if I did I'd be nothing but skin and bones."

SERGEANT INSTRUCTOR (exasperated): "The stork that brought that John should be arrested for smuggling dope!"

Luck is a good word if you put a P before it.

THE YOUNG THING: "Oh, I see, the chin strap is to keep the funny hat on!"
TROOPER: "Yeah. Funny hat! Well, you're wrong, Sis. It's to rest the funny jaw on, see?"

You can generally tell what a trooper is by what he does when he has nothing to do.

If you have a good temper, keep it;
If you have a bad temper, don't lose it.

PROUD NATIVE: "What do you think of our town?"
TROOPER: "It certainly is unique."
NATIVE: "What do you mean unique?"
TROOPER: "It comes from two Latin words—'unus' meaning one, and 'equus' meaning horse."

Guerrillas

PVT. BULLNECK: "Say, Sarg! This gorilla warfare I've been readin' about sure appeals to me."
SERGEANT: "*Gorilla* warfare *would* appeal to YOU—you ape."

Often, the difference between a wild horse and a tame horse is *two bits*.

"Say, Trooper, how long is your car going to keep stalling like this?"
"Just as long as you do, Whooper."

Investigate!

Some day there's going to be an investigator appointed to investigate the investigation of an investigating committee appointed to investigate the investigators of an investigation.

LADY: "I know you have pet names for the big guns, but what do you call the shells?"
TROOPER: "Depends on how close you are to where they bust, mum."

"My gal wuz up at de dance las' night wid anuther trooper."
"And what did you do, Private Bones?"
"I cut her acquaintance, yassuh! I sure cut 'im good and plenty!"

When asked about what, in his many battles, had struck him most, Veteran Trooper replied, "Sure, and what struck me most was the many bullets flying around that didn't strike me."

RECRUIT: What do I do if I lose control of this jeep?
INSTRUCTOR: Hit something soft and inexpensive.

"Who is that gal with the French heels?"
"That's my sister, but those *heels* with her ain't French."

LADY: "Is that a blooded horse?"
TROOPER: "It sure is. *Oscar*, bleed for the lady!"

The Service and the Loyalty I owe, in doing it, pays itself—*Macbeth*

NONCOM QUIZ*

WHERE other quizzes have dealt with specific phases of tactics, this one is much more general and includes questions on Reconnaissance, Security and Offensive and Defensive Action. Score 11 points for each whole question answered correctly. A perfect score is 99, and 74 is the lowest passing grade.

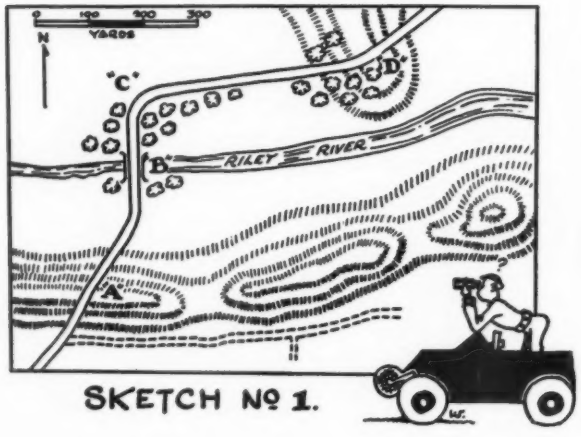
After answering all questions refer to a solution on page 92.

TEST

Questions

1. You command a scout-car platoon of a reconnaissance troop on a reconnaissance mission. Your platoon is moving north along the road shown on Sketch No. 1. Your point, at "A," observes the bridge 200 yards to its front and notes the right-hand turn in the road 100 yards beyond.

Explain briefly your method of reconnoitering and crossing the bridge with your platoon.



SKETCH Nº 1.

2. After the platoon crosses the bridge the point car cautiously approaches the turn (Point "C," Sketch No. 1), observes carefully in the new direction and, upon orders from the platoon leader, proceeds toward the ridge at "D." When about midway between "C" and "D" the point car receives heavy machine-gun fire from enemy at "D." The road is too narrow to permit the car to turn around in time to escape the ambush.

Briefly, what would be your plan, or method of employing the rest of the platoon to assist the ambushed car?

3. You command a front-line interior rifle troop, the platoons of which have just completed physically occupying their assigned defense areas and coördinating their fires. No contact has yet been made with the enemy but from rumors you believe there may be some in less than an hour. Some engineer tools were dumped in your defense area and the bulk of the men of the platoons are ready to use them. You must decide whether the first priority in work with the tools will be:

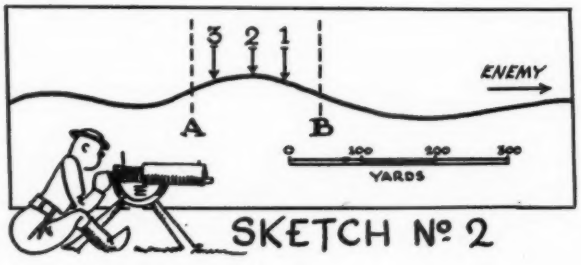
a. Measures for maintaining fighting power of the troops, such as constructing fox holes and slit trenches, or

b. Measures for increasing the effect of fire, such as clearing fields of fire.

Which do you decide?

4. The area assigned to your troop to defend is part of the initial delaying position assigned to the Squadron, and includes both the forward and reverse slopes of the geographical crest, between "A" and "B" in Sketch No. 2. Indicate at which point (1, 2 or 3) you would locate a machine gun attached to your platoon so as to have "position defilade."

b. If the gunner *were* located so as to have "position defilade," would he be able to see his target or targets?



SKETCH Nº 2

5. Consider a rifle troop attacking as an assault troop as part of a larger force in a dismounted attack. This troop has been able to maintain its expected rate of advance. An adjacent troop has been held up by the strength of the enemy resistance. How would you assist the troop that has been held up?

6. *a.* Name the three tactical groupings into which a troop is generally divided in the offensive.

b. Describe briefly the composition and purpose of each.

7. A troop commander (Sketch No. 3) has issued an order for a mounted pistol attack on the enemy column shown at "A," the attack to be in two waves.

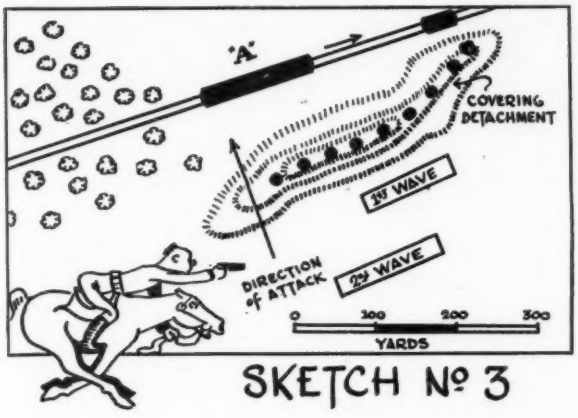
a. What is the position of the troop commander during the attack?

b. What is the approximate distance between waves during the attack?

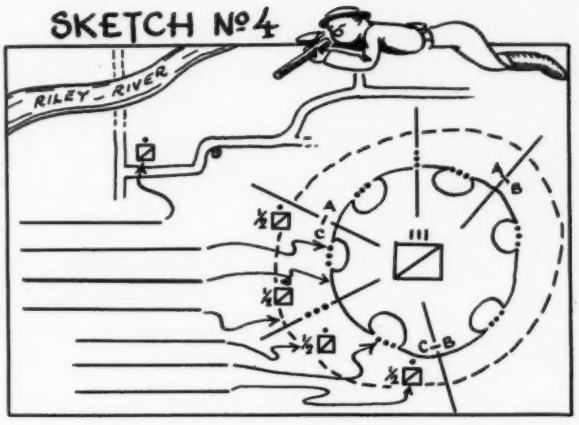
c. Where would be a suitable position for the LMG platoon?

d. What is the action of the covering detachment during the attack?

*Prepared under the direction of The Department of Tactics, The Cavalry School.



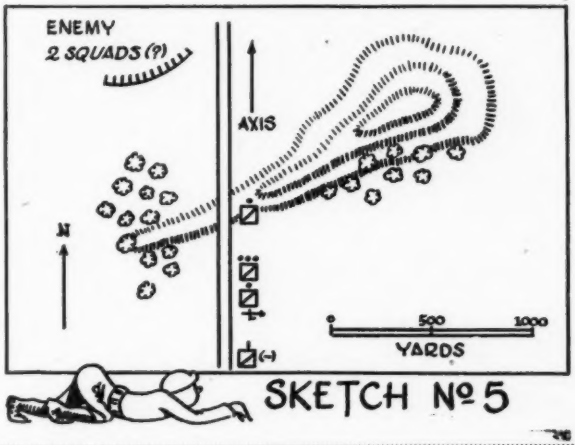
SKETCH No 3



8. Your regimental commander decides to bivouac for the night, selects the area and assigns sectors for the outpost. Your squadron commander assigns sectors of responsibility to the troops of the squadron.

Indicate on the appropriate blank space (Sketch No. 4) the names of subdivisions of the outpost. Where a subdivision is numbered, indicate the number.

9. Your platoon, with one LMG squad attached, forms the *advance party* of an advance guard in which the balance of the troop comprises the advance guard support. Your point of one squad (see Sketch No. 5) has just been stopped by hostile fire. With the situation as shown on the sketch, what is your plan of action?



SKETCH No 5

A Modified Pup Tent

By Lieutenant John R. Lane, 1st Cavalry Brigade

HERE is a boon for junior officers since the revised table of basic allowances eliminated the small wall tents for troops and officers below the grade of a field officer.

The modified pup tent illustrated was conceived by the author prior to and used during the Third Army maneuvers in Louisiana and met with great success in all kinds of weather under varied conditions.

The tent was made by adding a two foot extension to the length, three foot side walls, and full front flaps to an issue pup tent. Button flaps were installed at all corners, the end, and front for rolling up any section or for securing during bad weather.

Materials used were ten salvage shelter halves, eleven issue tent ropes, and ten large, or regular tent pegs. The pieces were cut out by the author and may be assembled by any saddler or commercial tent maker.

This makes a tent 5 feet, 9 inches high, 7 feet, 6 inches wide, and weighs about 20 pounds.

NOTE: For further particulars write to the author.

NONCOM QUIZ--A Solution

(Concluded from page 91)

1. The platoon leader goes forward in his car to join the "point" car at "A." The cars are placed behind the crest so that the occupants can observe the bridge from the cars. A more detailed observation may be made dismounted from positions along the crest on either side of the road if necessary.

This observation having disclosed no evidence of enemy, the platoon leader orders the "point" car to proceed to the bridge to make a detailed inspection, and cross under protection of the platoon leader's car from "A." The "point" car advances slowly down the hill, and off the road to cross the open ground, and approaches the bridge from the left (west) flank. Halting his car, the car commander and a rifleman dismount near the bridge and go forward to make the inspection.

Having satisfactorily completed the reconnaissance and inspection, the "point" car then crosses the bridge, moves on to the turn at "C," observes the high ground at "D" and proceeds on to that point to cover the crossing of the platoon leader's car, which would remain on the ridge at "A" until the point car reaches "D." Succeeding cars of the platoon would then follow the platoon leader's car, by bounds, and the patrol could continue on its mission.

2. From his position on the hill at "A" the platoon leader observes the enemy fire from "D." Quickly estimating the situation, he orders the guns of his own car to open fire on the enemy position and signals for the 2d section to come up. Briefly explaining the situation, and pointing out the enemy position at "D," he orders the 2d section to move rapidly under cover of the ridge to a position approximately 500 yards east of "A" and attack the enemy flank and rear by fire from a covered position along the crest. This plan of action offers maximum support to the ambushed car without exposing the other cars of the platoon to the danger of being ambushed.

3. *B* is correct (See par. 635, FM 100-5).

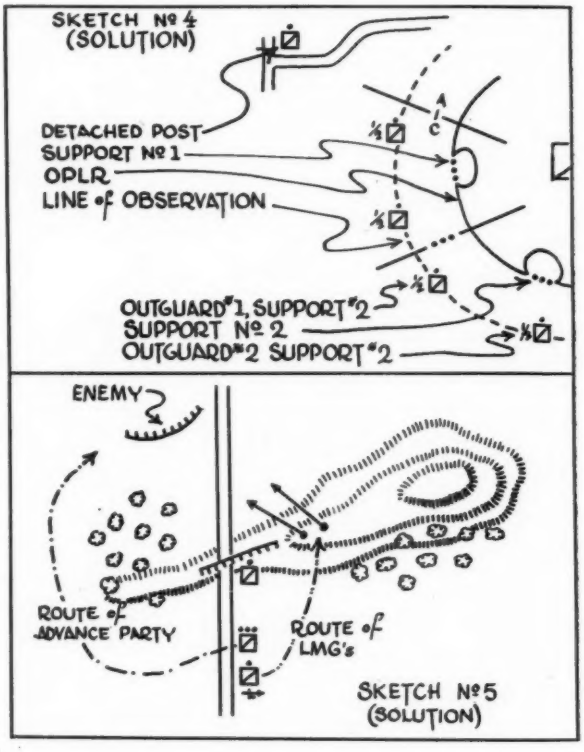
4. *a.* Gunner located at (3) would have "position defilade."
   b. Gunner *would not* be able to see his target or targets.

5. The advancing troop pushes forward to its objective, thus exposing the flanks of the enemy resistance. It then continues its assistance by bringing fire on, or attacking, the flanks and/or rear of the enemy position.

6. *a.* Main attack, secondary attack, reserve.
   b. (1) Main attack consists of the bulk of the force and strikes at the enemy's weak point.
   (2) Secondary attack consists of the lesser part of the force. It is employed to neutralize enemy fire and movement, to deceive the enemy as to the direction of the main blow, and to assist in the capture of the principal objective by seizure of adjacent key terrain.
   (3) The reserve—one-fourth to one-half of the command held out against unforeseen circumstances, to exploit the success of other attacking units or to extricate the command from dangerous developments.

7. *a.* Leading the second wave.
   b. Seventy-five to 100 yards.
   c. On the ridge.
   d. Split and form combat patrols on either flank.

8. (Sketch No. 4—solution.)



9. (Sketch No. 5—solution.)

Prompt aggressive action is required. The platoon leader with the LMG squad leader gallops up to the point, observes and estimates the situation. He instructs the corporal in command of the point to place heavy fire on the enemy patrol and informs him that an attack will be made against the right (west) flank of the enemy. He directs the LMG corporal to place his light machine guns on the ridge, as shown, and to support the attack. The platoon leader then rapidly returns to and leads his advance party around to his left and attacks the hostile patrol, mounted.

Book Reviews

REMEMBER PEARL HARBOR! By Blake Clark. New York: Modern Age Books, 1942. 127 pp.; $1.25.

The author, for the past twelve years has been Assistant Professor of English at the University of Hawaii. He knows the Pacific, has visited all of the Hawaiian Islands, and wrote the recent, much praised *Paradise Limited*—an informal history of the fabulous Hawaiians.

When the bombing started, December 7, 1941, Mr. Clark was at breakfast. What happened from then on he describes what he believed all Americans should know. Although submitted for censorship, it is the first full detailed account of what really happened on that fateful Sunday morning at Pearl Harbor when the infamous Japs attacked the United States.

Read this book, and you will *never forget Pearl Harbor!*

BOMBS AND BOMBING. By Willy Ley. New York: Modern Age Books, 1942 (second printing). 124 pp. $1.25.

Mr. Ley gives the reader what every civilian should know about all the various types of bombs—high explosives, incendiaries, gas, land mines, "bread baskets"—their contents and effects—what each is intended to do—civilian demoralization, military destruction—the bombardier's techniques and difficulties—bomb sights, psychological strains, level and dive bombing; and the various types of defense—AA guns, balloon barrages, air-raid wardens, etc.—in simple, clear words and line drawings, for the thousands of volunteers in the Civilian Defense Program and for the plain citizen who wishes to understand the news dispatches from Europe's capitals by an authority on explosives and incendiaries, the Science Editor of *PM*, Willy Ley.

WAR ECONOMICS. Edited by Emanuel Stein and Jules Bachman. Farrar & Rinehart, Inc. New York. 501 pp. $3.00.

The author covers just about everything that the subject implies.

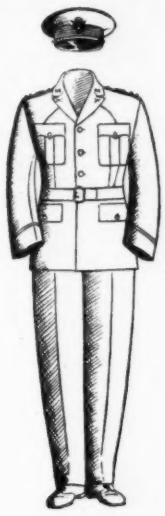
World War I for us did not last long enough for the American economy to feel the full impact of a prolonged war. We entered the present war, however, with a much greater awareness of the implications of war for our economic way of life; far more than ever before Americans now realize that a large-scale conflagration must have profound repercussions on every phase of economy; whole industries have to be organized, others disrupted and all find their activities subjected to government control.

This comprehensive volume describes the effects of war on the economy—our transition from a peacetime to a wartime economic organization—an analysis of the task of maximizing production of critical war essentials, etc.

This work is preëminent in its field.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

Bring it alive with the



OFFICERS' GUIDE

(Seventh Edition, February 1942)

The strain of total war emphasizes the vital need for every officer to orient himself immediately. No better help for this can be found than the newly revised OFFICERS' GUIDE.

TIMELY—printed February 1942—AUTHORITATIVE—based on official publications—HELPFUL—covers *everything* —the OFFICERS' GUIDE leads, advises and sets the new officer squarely on the path to efficient command.

The mass of official material dealing with what officers must and must not do has been skillfully digested and explained, logically arranged and helpfully illustrated. The many unwritten customs of the service, social do's and don'ts and other bewildering military practices are clearly explained.

THE OFFICERS' GUIDE is as necessary to an officer as his uniform, and being without either is apt to prove equally embarrassing.

•

488 pages, index profusely illustrated

$2.50

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

COMPANY ADMINISTRATION

Including Supply and Mess Management

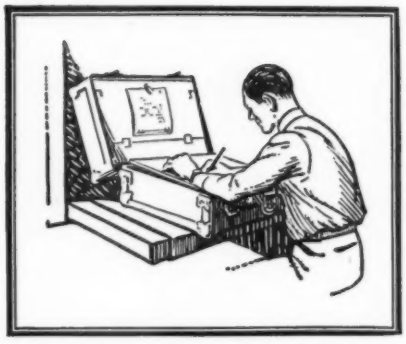
AND

PERSONNEL RECORDS

Including Personnel Office Organization and Procedure

By LIEUTENANT COLONEL C. M. VIRTUE

(Eleventh Edition, February 1942)



▶ The troop commander has the unenviable position of being halfway from the top and halfway from the bottom, subject to the pressure of working both ways from the middle. Unless he assigns some clerk the full-time job of digesting the latest regulations and orders, some essential duty must suffer while he tries to keep abreast of the latest procedures.

▶ COMPANY ADMINISTRATION AND PERSONNEL RECORDS is the answer to this dilemma. Thousand of troop commanders have found the solution to *every* troop problem in this invaluable book. Edition after edition has poured off the presses to keep troop commanders, sergeants and clerks advised of current procedures. The Eleventh Edition, February 1942, carries on the splendid work of its fellows, conveniently summarizing all the essential old and the important new information on troop administration.

▶ Rightly have Cavalryman depended on this book and rightly can troop commanders, sergeants and clerks continue finding *all* the information in the latest, Eleventh Edition.

FULL CLOTH BINDING, $2.00

WATERPROOF PAPER BINDING, $1.50

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

FLIGHT IN WINTER. By John Clinton Adams. Princeton University Press, Princeton, N. J. 1942. 281 pp. $3.00.

This volume contains a lesson for America. It is a story of human fortitude. It is the heroic account of the Serbian Retreat of 1915.

This is a book for today, and especially for all who believe in the unconquerable fortress of the human spirit. They knew they were going to defeat, but the Serbs literally were men who preferred death in a battle for faith and freedom, to slavery. They followed a great tradition. They did not deny their heritage!

This book has a tremendous appeal to military readers.

✓ ✓ ✓

HISTORY OF THE ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES, 1891-1941. By Colonel Edgar Erskine Hume, Medical Corps, United States Army. Washington: The Association of Military Surgeons. 371 pp.; Well Illustrated; $2.00.

The author deserves special recognition for this authoritative, comprehensive and painstaking achievement.

This volume belongs in the library of every member of the medical profession. It contains portraits of all of the Presidents of the Association from the beginning and all of the Secretaries and Editors of *The Military Surgeon*. Likewise, it contains many other pictures of what has transpired at the annual meetings of the Association and abstracts of the more important papers that have appeared in *The Military Surgeon*. Finally there is a General Index, from 1891 to 1941 inclusive, of the articles in *The Military Surgeon*. The only ones omitted from this Index are those of transient value of purely clinical interest. Everything pertaining to military medicine as a specialty is included. This apparently is the first history of the kind ever published for, or by a branch of the Army.

✓ ✓ ✓

THE JAPANESE ENEMY, His Power and His Vulnerability. By Hugh Byas. Alfred A. Knopf. 1942. 107 pp. $1.25.

The author is the well known correspondent for *The New York Times*. He feels that it is only by a knowledge of Japanese ambitions, emotional orientations and institutions that we shall come to know the strength and vulnerability of the Japanese enemy. From his unique knowledge of the Japanese Empire he tells how the Japanese mind works, who are the real rulers of the nation, what is their plan for this war, and what we must do to defeat our enemy.

"This is a book about the essential spirit and social structure of our Pacific foe rather than a book of facts and figures."

✓ ✓ ✓

JAPAN'S INDUSTRIAL STRENGTH. By Kate L. Mitchell. Alfred A. Knopf. New York. 1942. 140 pp. $1.50.

This is an authoritative work prepared under the auspices of the International Secretariat, Institute of Pacific Relations. It reveals the extent to which we have underestimated Japanese power and suggests what we may expect in

the future. Completed only a few weeks before the outbreak of war, it embodies the latest information on the subject from both Japanese and English sources.

It is a compact and useful handbook.

★ ★ ★

MILITARY LAW AND DEFENSE LEGISLATION. By A. Arthur Schiller. West Publishing Co., St. Paul, Minn. 1941. 700 Pages. $5.00.

During war the lawyer is constantly faced with problems that are tied up with military law or the related fields of emergency, defense, or war-time legislation. The law schools are beginning to meet these conditions by adding courses on military law. This up-to-the-minute text is designed for just this purpose. It is a teaching book that adquately covers the field.

The book opens with a consideration of the constitutional extent of military power. Then follows a chapter devoted to the organization and composition of the Army of the United States. Chapter III discusses military law proper and opens with a survey of the sources of military law, followed by cases devoted to military jurisdiction and its relation to civil jurisdiction. The final chapter is devoted to the civil rights of the soldier, based primarily on sources relating to the Civil Relief Acts of 1918 and 1940.

The Articles of War, the Selective Training and Service Act of 1940 and the Soldiers' and Sailors' Civil Relief Act of 1940 are to be found in appendices, while indexes of cases, opinions, legislative and administrative materials, and a subject index complete the whole.

★ ★ ★

ARMY TALK, The Language of U. S. Soldiers. By Elbridge Colby. Princeton University Press. Princeton, N. J. Illustrated. 232 pp. $2.00.

This book is for the friends and relatives of soldiers so that they might understand the strange and colorful means of communication known as "army talk."

Some "cleaning up" of the language obviously was necessary for publication, but the author retains the rich human interest and spirit of the U. S. Army.

Army Talk includes slang terms of both ancient and recent origin, official and technical terms that have passed into general army speech; also, new terms since 1940 that have not yet gained general acceptance.

This is the first serious effort to present not merely a casual glossary but a "familiar dictionary" of the expressive speech or jargon of the American soldier.

★ ★ ★

SOME COMMON DISEASES OF THE HORSE. By George H. Conn, B.S.A.H., D.V.M. Orange Judd Publishing Company, Inc. New York. 1942. Illustrated. 187 pp. $1.50.

While this book is directed mainly to civilians who own farm and saddle horses, it is also useful to the mounted services. It contains brief and practical advice on the nature, cause and treatment of disease, the common ailments and the care and management of horses when sick. In other words, it is an excellent elementary course in hippology, and other relative material.

Custer's Last Fight

★ ★ ★

THE STORY OF THE LITTLE BIG HORN

Colonel W. A. Graham

OUT of the welter of accusation and counteraccusation, Colonel Graham has gathered and impartially weighed the evidence to give the only completely authoritative STORY OF THE LITTLE BIG HORN. This history of the greatest battle between the onsurging white man and the stubbornly receding red man has had new material added that throws fresh light on Custer's magnificent stand.

Pictures of the leaders on both sides, maps, reproductions of the battlefield and a sketch of the defense of General Terry make this what the late General Charles King called, "The one complete and reliable record yet to appear of Custer's Last Battle."

★

Limited Edition—Order Now

$2.00 postpaid

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

Books – Manuals – Texts

G. P. O. MANUALS

CAVALRY:

A- 1 (2- 5) Horse Cavalry	$ .50
A- 2 (2- 10) Mech. Cav. Elements	.20
A- 3 (2- 15) Employment of Cavalry	.30
A- 4 (2-220) The Horseshoer	.25

BASIC AND TECHNICAL:

A- 5 (25- 5) Animal Transport	.25
A- 6 (25- 10) Motor Transport	.20
A- 7 (100-5) FSR, Operations	.35
A- 8 (100-10) FSR, Administration	.25

INDIVIDUAL ORDER FORM

THE CAVALRY JOURNAL,
1719 K Street, N.W.
WASHINGTON, D. C.

Please send me the following checked items:

A— 1 2 3 4 5 6 7 8

B— 1 2 3 4 5 6 7

C— 1 2 3 4 5 6 7 8 9 10 11 12
— 13 14 15 16 17 18 19 20 21 22 23 24

D— 1 2 3 4 5 6 7 8 9 10 11 12
— 13 14 15 16 17

E— 1 2 3 4 5 6 7 8 9 10 11 12

F— 1 2 3 5 6 7 8 9 10 11 12
— 13 14 15 16 17 18 19

G— 1 2 3 4 5 6 7 8 9 10 11 12
— 13 14 15

OTHER BOOKS

☐ I inclose remittance in the amount of

$_____

☐ Send bill to Troop Fund, _____
(For unit orders only)

_____
Name (Please Print)

_____
(Street address or box number)

_____
(Town — Post) (City and State)

THE CAVALRY SCHOOL DEPARTMENTAL TEXTS

B- 1 CAVALRY WEAPONS AND MATÉRIEL:	
Vol. I—General Subjects, Light Machine Guns, Musketry and Combat, Packs and Harness	1.00
Vol. II—Heavy Machine Guns, Special Purpose Weapons, Moving Targets	1.00
Vol. III — Demolitions, Radio, Motor Vehicles	1.00
B- 2 Tactical Principles and Logistics for Cavalry	1.00
B- 3 Horsemanship and Horsemastership	1.25
B- 4 Methods of Combat for Cavalry	1.00
B- 5 Seats, Gaits, Reactions (Translated from the French)	.80
B- 6 Animal Management (Translated from the French)	.80
B- 7 The Gaits — The Horseman (Translated from the French)	.80

STANDARD GUIDES

C- 1 Tactics and Technique of Cavalry, Basic	3.50
C- 2 Tactics and Technique of Cavalry, Adv.	5.00
C- 3 Officers' Guide, 7th edition	2.50
C- 4 Officers' Manual, *Moss*	2.50
C- 5 Company Administration and Personnel Records, *Virtue* (Paper), 11th edition	1.50
C- 6 Company Administration and Personnel Records, *Virtue* (Cloth), 11th edition	2.00
C- 7 Modern Military Dictionary (Cloth)	2.00
C- 8 Modern Military Dictionary (Leatherette)	2.25
C- 9 Combat Communications, *Allen*	.35
C-10 Reconnaissance, *Allen*	.35
C-11 Combat Intelligence, *Schwein*	2.00
C-12 S-2 in Action, *Thomas*	1.50
C-13 Soldier's Handbook	.50
C-14 Courts-Martial Practical Guide	1.00
C-15 Machine Gunner's Handbook	.50
C-16 The Soldier and the Law	1.50
C-17 Group Feeding, *Kaiser*	3.50
C-18 Mass Physical Training, *Roycroft*	3.00
C-19 Medical Soldier's Handbook	1.00
C-20 Insignia of the Services, *Brown*	1.50
C-21 Manual of Mess Management	2.00
C-22 Practical Manual of Martial Law	2.00
C-23 Map and Aerial Photos Simplified	1.00
C-24 State Defense Manual	1.00

STANDARD BOOKS ON WAR

D- 1 Cavalry Combat $2.50
D- 2 Leadership for American Army Leaders, *Munson* 1.00
D- 3 Infantry in Battle 3.00
D- 4 American Campaigns, *Steele* (2 vols., Texts and Maps) 8.00
D- 5 World's Military History, *Mitchell* 3.00
D- 6 Warfare, *Spaulding, Wright, Nickerson* .. 3.00
D- 7 Battle Studies, *Ardant du Picq* 2.50
D- 8 A Rifleman Went to War, *McBride* 3.50
D- 9 Maneuver in War, *Willoughby* 3.00
D-10 Allenby, by *General Wavell* 3.00
D-11 America in Arms, *Palmer* 2.00
D-12 Generals and Generalship, *Wavell* ..... .50
D-13 U. S. Army in War and Peace, *Spaulding* .. 6.00
D-14 Chemical Warfare, *Wachtel* 4.00
D-15 Roots of Strategy, *Phillips* 3.00
D-16 Technique of Modern Arms, *Muller* 2.50
D-17 Art of Modern Warfare, *Foertsch* 2.75

BOOKS FOR THE HORSEMAN

E- 1 A Horseman's Handbook on Practical Breeding, by *Colonel John F. Wall*, U. S. A., Retired 4.00
E- 2 Hand Book for Horse Owners, *McTaggart* 2.75
E- 3 Horse Training, Outdoor and High School, *Beudant* (translated by Lt. Col. J. A. Barry, U. S. Cavalry) 3.00
E- 4 Horseshoeing, *Churchill*, 1933 ..... 1.20
E- 5 Horsemanship, by *Brooke* 7.00
E- 6 More About Riding Forward, by *Littauer* .. 3.00
E- 7 My Horse Warrior 2.00
E- 8 Position and Team Play, *Devereaux* 1.50
E- 9 Riding Forward, *Capt. V. S. Littauer* 2.00
E-10 School for Riding, *Capt. Sergei Kournakoff* 2.50
E-11 The Art of Riding, *Lt. Col. M. F. McTaggart* 3.50
E-12 Be a Better Horseman, by *Littauer* 10.00

MODERN WARFARE BOOKS

F- 1 Modern Battle, *Thompson* $2.00
F- 2 Armies on Wheels, *Marshall* 2.50
F- 3 New Ways of War, *Wintringham* ..... .25
F- 5 Blitzkreig, *Marshall* 2.00
F- 6 Invasion in the Snow, *Langdon-Devies* 2.50
F- 7 America and Total War, *Pratt* 3.00
F- 8 Under the Iron Heel, *Moën* 2.75
F- 9 Winged Warfare, *Arnold & Eaker* 3.00
F-10 Douhet and Aerial Warfare, *Sigaud* 1.75
F-11 The Impact of War, *Herring* 2.50
F-12 War in the Air, *Garnett* 3.50
F-13 The Fleet Today, *Banning* 2.50
F-14 West Point Today, *Banning* 2.50
F-15 Annapolis Today, *Banning* 2.50
F-16 The Nature of Modern Warfare, *Falls* 1.25
F-17 Great Soldiers of Two World Wars, *DeWeerd* 3.50
F-18 Building An Army, *Johnston* 1.00
F-19 Pattern of Conquest, *Harsch* 2.50

GENERAL

G- 1 Story of the Little Big Horn, *Graham* 2.00
G- 2 Current Spanish, *Martinez* 1.00
G- 3 How To Say It In Spanish ..... .75
G- 4 Berlin Diary, *Shirer* 3.00
G- 5 Army Wife, *Shea* 2.50
G- 6 Keep 'em Rolling ..... .50
G- 7 The Great Pacific War, *Bywater* 2.50
G- 8 Introducing Australia, *Grattan* 3.00
G- 9 Mission To Moscow, *Davies* 3.00
G-10 Reville in Washington, *Leech* 3.50
G-11 German Psychological Warfare 2.50
G-12 I Was a Nazi Flyer, *Leske* 2.50
G-13 A Roving Commission, *Churchill* 1.75
G-14 Indian-Fighting Army, *Downey* 3.50
G-15 Army Talk, *Colby* 2.00

Books not listed can be supplied upon request.

10% discount on orders of $10.00 or more.

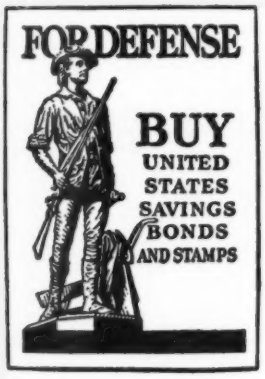
Order Through

The Cavalry Journal

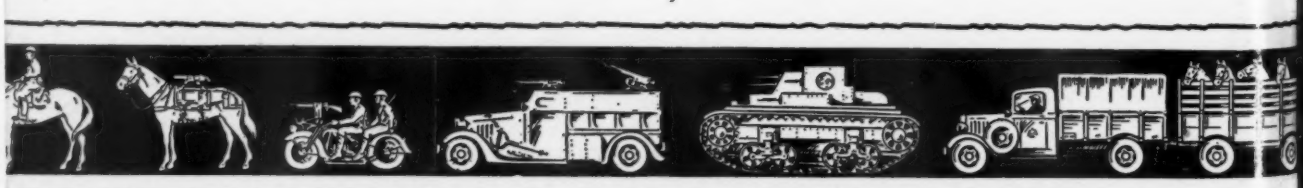
1719 K Street, N.W. WASHINGTON, D. C.

United States Cavalry Association

1719 K St., N.W., Washington, D.C.



BUY TILL IT HURTS
-- HURTS THE ENEMY!

This is one investment in which service folk cannot lose - -

BUY AMERICA!